AFV G2

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A MAGAZINE FOR MILITARY VEHICLE ENTHUSIASTS

Volume 5 Number 7

Muzzle Blast

LETTERS • COMMENTS • NOTES • CORRECTIONS • ADDITIONS

Dear Editor:

Lt. Paul Schaden's Volume 5, Number 6 *'Armor in Pictures'* photos are not of a Type 95 Light Tank (code name *HA-GO, KYU-GO* or *KE-Go*). It is instead a Type 97 Tankette *TE-KE*, whose manually-traversed turret mounted either a 7.7mm machine gun or a 37mm tank gun. The camouflage colors are an incorrect restoration scheme. A small horn is missing from in front of the muffler; also missing is the engine cover housing on the right rear side, and the right rear mudguard is damaged. It should be added that this is the only *TE-KE* in the United States and only one of the remaining two in the world.

As seen in the threephotos which I enclose, taken in 1968 or so: the rear ¾ of the domed turret top can be opened as a hatch, as can a small door on the turret's rear, and there is a hatch atop the driver's compartment. The camouflage colors in 1968 were different from the 1975 colors. Note in the 1968 photos that the tracks are tight-fitting, the engine cover housing has been raised, and the right rear mudguard is not badly bent. There should be a lower rear hull towing bar with a pintle. (The small square on the hull rear is minus a covering plate.)

Unfortunately there is no size comparison in any photo so one cannot appreciate the 3.7-meter length, 1.9-meter width or the 1.79-meter height of the *TE-KE*.

James Dallas' *'Armor on the Cartoon Front'* in the same issue is a humerous, but to armor buffs a too severe misrepresentative drawing of the *TE-KE*. Comical drawings must take some liberties...so keep up the good work, James, and don't mind us goof-offs. We're just jealous of your talent.

Sincerely yours,

Paul M. Roland
Ormond Beach, FL

Editor's Note: Mr. Roland's photos are reproduced below.

To the Editor:

The article in the last issue on the GKN Sankey *AT-104* Armored Personnel Carrier nicely summarized that particular vehicle. This vehicle was actually derived from the same company's earlier *AT-100*; the two vehicles differ mainly in that the *AT-104* has a differently shaped body, it is marginally larger and has four-wheel drive. I am enclosing clip photos of both vehicles in the hope that you can use them in *AFV-G2*.

I should also indicate that four of the *AT-104* vehicles have been purchased by the Dutch Police for use in anti-riot duties.

Sincerely yours,

Dave Haugh
Campbell, CA

Editor's Note: The two photos mentioned in the above letter are printed in this issue's Armor in Pictures *article, appearing on page 25. We understand that GKN Sankey is at present modifying their* AT-104 *per a British Army request. We will publish additional details as they are available.*

Dear Sirs;

I first would like to compliment you on your fine magazine. Your article on indirect fire in Vol. 5, No. 6 was fascinating.

Your use of the term 'mil' rather confused some of us though. Doing a little research, I found an enlightening definition of the 'mil' in 'THE TANK COMMANDER'S GUIDE' for the M48A1 in the Boston Public Library. In order to help better comprehend the use of the mil, I've paraphrased the official definition:

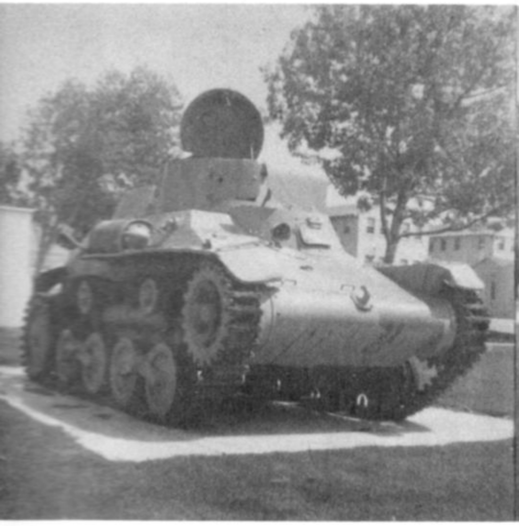
A mil is 1/6400 of a circle. For tank gunnery, it equals the width ot height of one meter at a range of 1000 meters (1 kilometer).

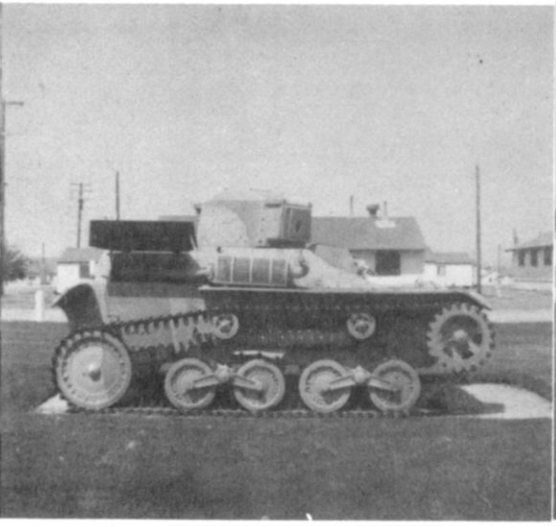
A. 1 mil at .5 kilometer = .5 meter
B. 1 mil at 1 kilometer = 1 meter
C. 1 mil at 2 kilometers = 2 meters
D. 1 mil at 3 kilometers = 3 meters

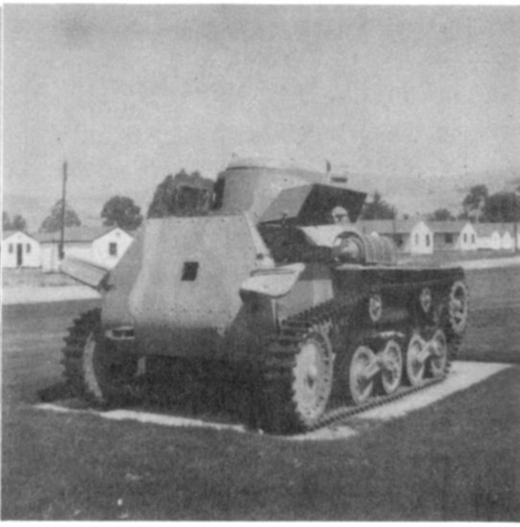
Another way to look at mil usage would be to say that if a target at 5000 meters (5 kilometers) is missed to the right by 10 meters (33 feet), a correct of 2 mils to the left should be made.

Or, if you are on target at 1500 meters (almost a mile) and move the gun 4 mils to the left, the shot would hit 6 meters (almost 20 feet) to the left.

Continued on Page 41







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Cover:

Front Cover: This highly-graphic cover illustration was provided by Vickers Limited, via David Chack, and it shows the 'Abbot' Self-Propelled 105mm Howitzer. This weapons system is the standard medium-caliber SP Howitzer of the artillery units of the Briitsh Army.

Rear Cover: This front-view photograph illustrates the sole-surviving German *Sd. Kfz. 234/4* armored car. Located at the Patton Museum; Fort Knox, Kentucky; this vehicle represents the last modification of the German heavy armored car to be performed in World War II. For more on this interesting vehicle, see the article on page 20. Photo by David Brownell of Ann Arbor, Mich.

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US ISSN 0001-124X

AFV-G2 is a magazine, published entirely for Military Vehicle enthusiasts, with the purpose of gathering and disseminating information about Military Vehicles and their employment; to provide an opportunity for persons seriously interested in the history of Military Vehicles, in the modeling of these vehicles and associated equipment, and in the playing of Military Wargames utilizing miniature vehicles, to share ideas and items of mutual interest and to promote an interest and awareness in the subject of Military Vehicles.

AFV-G2 is available with an individual issue price of $1.25 from local Hobby Shops, Magazine and Book Dealers, or from the Publisher. Subscriptions in the United States (including APO and FPO addresses) are $12.50 yearly. All foreign subscriptions are $15.50 yearly, payable in U.S. funds. Checks should be made payable to *'AFV-G2'* or to Baron Publishing Company and forwarded to Baron Publishing Company, P.O. Box 820, La Puente, California 91747. In the United Kingdom, contact Greening, Knoll Cottage, Knoll Road, Dorking, Surrey.

AFV-G2 is printed in the United States and is mailed to subscribers via Third Class Mail. Changes of Address should be forwarded in advance to the publisher, who assumes no liability for copies not forwarded due to change of address.

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Photo Above: An M60A1 Medium Tank of the Regular Army's 4th Battalion, 37th Armor, shown during the Summer of 1974 when this vehicle was 'on loan' to elements of the Kentucky Army National Guard. It is quite common for Reserve and Guard units to receive vehicle loans during their Summer Camps. Photo Credit: Commonwealth of Kentucky via Charles H. Bogart.

The Modern U.S. Army

Part 2 – National Guard & Army Reserve

by Tom Dinackus

Last year, Secretary of Defense James Schlesinger announced that the *'Total Force Concept'* was now Department of Defense policy. *'Total Force'* now meant that the Army National Guard and Army Reserve would no longer be the Active Army's 'poor relations' in terms of equipment, training and manpower, but would now become true partners in the defense of the United States. As an interesting aside, it should be noted that while the Regular Army is celebrating its bicentennial this year, the oldest unit in the United States military is the *1st Battalion, 182nd Infantry* of the Massachusetts Army National Guard (organized in 1636) and the oldest continuously-active unit in the U.S. military is *Troop A, 1st Squadron, 104th Cavalry* of the Pennsylvania Army National Guard, organized in 1774 as the 'Light Horse of the City of Philadelphia', later to be known as the 'First Troop Philadelphia City Cavalry'; it is mentioned prominently in the Armor-Cavalry Volume of the U.S. Army Lineage Series.

ARMY NATIONAL GUARD (*ARNG*)

The Guard, like the Active Army and Army Reserve, is organized under *ROAD* and *CARS*. The Guard today has:

2 *Armored Divisions* (1 at ⅔ strength)
1 *Mechanized Division*
5 *Infantry Divisions*
3 *Separate Armored Brigades*
6 *Separate Mechanized Brigades*

Photo Above: An M60 Medium Tank of the Kentucky Army National Guard's 149th Armor Brigade. This photo was taken during the unit's Annual Active Duty for Training [*or* ANACDUTRA] *at Fort Knox in the Summer of 1974. Photo Credit: Commonwealth of Kentucky via Charles H. Bogart.*

11 *Separate Infantry Brigades*
3 *Armored Cavalry Regiments*
1 *Non-Divisional Armor Brigade**
1 *Non-Divisional Mechanized Brigade*
1 *Non-Divisional Infantry Brigade*
1 *Non-Divisional Airborne Brigade*
1 *Air Defense Artillery Brigade*
2 *Corps Artilleries*
2 *Special Forces Groups*
4 *Engineer Brigades* (1 - *Construction*)
2 *Military Police Brigades*
1 *Support Brigade*
1 *Transportation Brigade*
1 *Strategic Communications Command*

Guard Divisions are organized similarily to the Active Army. Of the eight Divisions, two are split between three states each, two are located in two states each, and four are located wholly within their own state. This necessitates some juggling of the units of multi-state Divisions. Generally, for three-state Divisions, each State has one *Brigade* with three *Maneuver Battalions*, one *Field Artillery Battalion*, and one *Company* (or *Armored Cavalry Troop*, in the case of the *Armored Cavalry Squadron*) of each *Battalion* comprising the *Division Support Command* and *Division Troops*. The *Division Base* is then assigned to the state that the Division is traditionally associated with. For example, the *38th Infantry Division*, a traditional Indiana Guard unit, now has a *Division Base* in Indiana, and three *Brigades*, one each in Indiana, Michigan, and Ohio.

The *Division Base* usually consists of the *Division Headquarters and Headquarters Company*, *Division Artillery Headquarters and Headquarters Battery*, the *8-inch Self-Propelled Battalion* (*Armored* and *Mechanized Divisions*) or the *Composite 155mm Towed /8-inch Self-Propelled Battalion* (*Infantry Divisions*), and the *Honest John Battalion* (if the Division has one). In addition, the *Headquarters* of each of the *Battalions* comprising the *Division Support Command* and *Division Troops* is part of the *Division Base*, along with any other units assigned to the Division (such as *MP*, *Adjutant General*, *Finance*, etc. *Companies*). The entire *Signal Battalion* is always located in the state with the *Division Base*. In the case of *Infantry Divisions*, the *Armor* and *Mechanized Battalions* are usually assigned to the state with the *Division Base*. For the two-state Divisions, the same procedure is followed; one state having 2 *Brigades* and the *Division Base*, and the other having the final *Brigade*.

Two of the three *Armored Cavalry Regiments* are split between two states each. One state has the *Headquarters Troop*, *Air Cavalry Troop*, and the *1st* and *2nd Squadrons*, while the second state has the *3rd Squadron*. All the *Separate* and *Non-Divisional Brigades* are located in one state each.

Probably the most obvious different between the Active Army and *ARNG* is the predominance of 'small' units in the Guard. *Separate Brigades* are organized with a *Headquarters and Headquarters Company*, an *Armored Cavalry Troop*, three *Maneuver Battalions*, one *Field Artillery Battalion*, an *Engineer Company*, and a *Support Battalion* (which contains *Medical*, *Supply and Transportation*, *Administration* and *Maintenance Companies*).

Separate Armored Brigades have two *Armor Battalions* and one *Mechanized Battalion*. *Separate Mechanized Brigades* have one *Armor Battalion* and two *Mechanized Battalions*, and *Separate Infantry Brigades* have three *Infantry Battalions*.

The *Non-Divisional Brigades* are unique to the Guard. Each consists of a *Headquarters and Headquarters Company* and two *Maneuver Battalions*, both of the same type as the *Brigade* (i.e. an *Armor Brigade* has two *Armor Battalions*). For other than *Maneuver* units, this type of organization (a *Headquarters* and two *Battalions*) is termed a *Group*. *Group*

Photo Above: An M110 8-inch Self-Propelled Howitzer of one of the Field Artillery Battalions of XXIII. Corps Artillery, a Kentucky Army National Guard unit. This photo was taken during ANACDUTRA in June 1975 at Camp Shelby, Miss. Photo Credit: Kentucky Military History Museum.

types include *Military Police*, *Signal*, *Engineer*, *Field Artillery*, etc. (*Field Artillery Groups* are very common in the Guard.) The *Group* is the most flexible (as far as organization goes) of U.S. Army units, having anywhere from a *Headquarters* and one *Company* to up to a *Headquarters* and four or more *Battalions*. The Guard's *Air Defense Artillery Brigade* is really a *Group*, with four *SP Automatic Weapons Battalions*, each with a *Headquarters and Headquarters Battery* and four *Gun Batteries*. While the Guard has two *Corps Artilleries*, there are no *Corps Headquarters*; the *Corps Artilleries* are really glorified *Field Artillery Groups*. The Guard's two *Special Forces Groups* have their units scattered all around the country.

ARMY NATIONAL GUARD UNITS:

49th Armored Division	Texas
50th Armored Division	
1st Brigade	New Jersey
86th Brigade	Vermont
Division Base	New Jersey
40th Infantry Division (Mechanized)	California
26th Infantry Division:	
1st Brigade	Massachusetts
3rd Brigade	Massachusetts
43rd Brigade	Connecticut
Division Base	Massachusetts
28th Infantry Division	Pennsylvania
38th Infantry Division:	
46th Brigade	Michigan
73rd Brigade	Ohio
76th Brigade	Indiana
Division Base	Indiana
42nd Infantry Division	New York
47th Infantry Division:	
1st Brigade	Minnesota
34th Brigade	Iowa
66th Brigade	Illinois
Division Base	Minnesota
30th Separate Armored Brigade	Tennessee
31st Separate Armored Brigade	Alabama
155th Separate Armored Brigade	Mississippi
30th Separate Infantry Brigade (Mech)	North Carolina
32nd Separate Infantry Brigade (Mech)	Wisconsin
48th Separate Infantry Brigade (Mech)	Georgia
67th Separate Infantry Brigade (Mech)	Nebraska
81st Separate Infantry Brigade (Mech)	Washington
218th Separate Infantry Brigade (Mech)	South Carolina
29th Separate Infantry Brigade	Hawaii
33rd Separate Infantry Brigade	Illinois
39th Separate Infantry Brigade	Arkansas
41st Separate Infantry Brigade	Oregon
45th Separate Infantry Brigade	Oklahoma
53rd Separate Infantry Brigade	Florida
58th Separate Infantry Brigade	Maryland
69th Separate Infantry Brigade	Kansas
92nd Separate Infantry Brigade	Puerto Rico
116th Separate Infantry Brigade	Virginia
256th Separate Infantry Brigade	Louisiana
*149th Armor Brigade ***	Kentucky

Photo Above: M-48A1 [on left] and M-48A3 Medium Tanks of the Pennsylvania Army National Guard in storage at Indiantown Gap Military Reservation, December 1974. The 'Gap' has since been renamed 'Fort Indiantown Gap'. Note the vision risers on the Commander's Cupolas on the M-48A3's. Photo Credit: Author's Collection.

278th Infantry Brigade (Mech) **	Tennessee
49th Infantry Brigade **	California
36th Airborne Brigade **	Texas
111th Artillery Brigade (Air Defense)	New Mexico
107th Armored Cavalry Regiment	Ohio
116th Armored Cavalry Regiment:	
Hq, Air Cav Trp, 1st & 2nd Squadrons	Idaho
3rd Squadron	Nevada
163rd Armored Cavalry Regiment:	
Hq, Air Cav Trp, 1st & 2nd Squadrons	Montana
3rd Squadron	Oregon
XI. Corps Artillery	Utah
XXIII. Corps Artillery	Kentucky
19th Special Forces Group (Abn)	Salt Lake City, Utah (*Hq.*)
20th Special Forces Group (Abn)	Birmingham, Alabama (*Hq.*)
16th Engineer Brigade	Ohio
30th Engineer Brigade (Construction)	North Carolina
35th Engineer Brigade	Missouri
194th Engineer Brigade	Tennessee
43rd Military Police Brigade	Rhode Island
258th Military Police Brigade	Arizona
167th Support Brigade	Alabama
261st Strategic Communications Command	Delaware
184th Transportation Brigade	Mississippi

** These are *Non-Divisional Brigades*.

'AFFILIATION' - 'ROUND OUT'

There are two programs under which Reserve Component units are attached to the Active Army. In *'ROUND OUT'*, National Guard and Reserve units are attached to under-strength Active Army Divisions to bring them up to strength in time of war. The *'ROUND OUT'* program originally consisted of the following units:

29th Separate Infantry Brigade †	*25th Infantry Division*
1 Army Reserve *Infantry Battalion* ‡	*25th Infantry Division*
1st Battalion, 123rd Armor (ARNG)	*2nd Armored Division*
8th Battalion, 40th Armor (USAR)	*2nd Armored Division*
3rd Battalion (Mech), 117th Infantry (ARNG)	*2nd Armored Div.*

Under *'AFFILIATION'*, Guard and Reserve units are attached to full strength Active Army Divisions and presumably would deploy and fight with these Divisions. Under *'Track I.'* (instituted last year), *'AFFILIATION'* consisted of:

NATIONAL GUARD UNITS	*ACTIVE ARMY DIVISIONS*
32nd Infantry Bde (Mech)	*1st Infantry Division (Mech)*
67th Infantry Brigade (Mech)	*4th Infantry Division (Mech)*

---

† Because of the *29th*'s special role, it is organized differently than the other *Separate Infantry Brigades*:

Headquarters & Headquarters Company
2 *Infantry Battalions*
1 *Field Artillery Battalion*
1 *Air Cavalry Troop*
1 *Engineer Company*
1 *Service Battalion*

The *Service Battalion* is unique in that it has numbered instead of lettered companies.

‡ Unfortunately, I do not know the designation of this *Infantry Battalion*. Can any reader provide assistance?

TRACK II. AFFILIATION CHART

ACTIVE UNIT	*NATIONAL GUARD UNIT*	*STATE*
2nd Armored Division	*1, 2/123rd Armor* *	Kentucky
	3/117th Infantry (Mech) *	Tennessee
	1/623rd Field Artillery (8-in. SP)	Kentucky
1st Cavalry Division	*1/263rd Armor* *	South Carolina
	2/252nd Armor *	North Carolina
	2/120th Infantry (Mech) *	North Carolina
	1, 4/114th Field Artillery (both 155mm SP)	Mississippi
1st Infantry Division (Mech)	*32nd Separate Infantry Brigade*	Wisconsin
	2/136th Infantry (Mech) *	Minnesota
	1/126th Field Artillery (155mm SP)	Wisconsin
	1/127th Field Artillery (155mm SP)	Kansas
4th Infantry Division (Mech)	*67th Separate Infantry Brigade (Mech)*	Nebraska
	1/225th Infantry (Mech) *	Michigan
	1/147th Field Artillery (155mm SP)	South Dakota
	2/157th Field Artillery (8-in SP)	Colorado
9th Infantry Division	*81st Separate Infantry Brigade (Mech)*	Washington
	1/803rd Armor	Washington
	2/222nd Field Artillery (155mm SP)	Utah
25th Infantry Division	*29th Separate Infantry Brigade* *	Hawaii
82nd Airborne Division	*1, 2/143rd Infantry (Airborne)*	Texas
101st Airborne Division (Air Aslt)	*39th Separate Infantry Brigade*	Arkansas
197th Infantry Brigade	*2/117th Infantry (Mech)*	Tennessee
III. Corps Artillery	*1/180th Field Artillery* (155mm SP)	Arizona
	1/158th Field Artillery (8-in SP)	Oklahoma
2nd Battalion, 34th Field Artillery (Attached to *194th Armored Brigade*)	*1/201st Field Artillery* (155mm SP)	West Virginia

* Round Out

Four Signal Battalions *and nine* Engineer Battalions *are also under the* 'AFFILIATION' *Program. Note: This is a preliminary list of the combined* 'Track I.' *and* 'Track II.' *National Guard units - other units will possible be added and there are Army Reserve units also in the program.*

81st Infantry Brigade (Mech)	*9th Infantry Division*
39th Infantry Brigade	*101st Airborne Division (Air Aslt)*
36th Airborne Brigade	*82nd Airborne Division*

'Track II.', which was recently initiated, is a much more comprehensive expansion of the earlier program. It involves more Active Army Divisions and includes the Guard units shown in the chart above. Note that this chart does not include any units of the Army Reserve.

Under *'Track III.'* Affiliation (which was initiated 1 May 1975), three Reserve Component *Brigades* and other units will 'Round Out' the three Regular Army Divisions just activated. Under this program, the *5th Infantry Division (Mech)* will receive the *256th Separate Infantry Brigade*, and the *24th Infantry Division* will be assigned the *48th Separate Infantry Brigade (Mech)* and the *2nd Battalion (Mech), 117th Infantry*. Units to be affiliated with the *7th Infantry Division* have not been announced yet.

THE ARMY RESERVE

The Army Reserve's main combat capability is provided by three *Separate Brigades*:

157th Separate Infantry Brigade (Mech)	Pennsylvania
187th Separate Infantry Brigade	Massachusetts
205th Separate Infantry Brigade	Minnesota, Iowa and Wisconsin

These are organized as are National Guard *Separate Brigades*. In addition to the units in these *Brigades*, the only other *Maneuver Battalions* in the Army Reserve are an *Infantry Battalion* in Hawaii, which is attached to the *25th Infantry Division* under *'Round Out'*, and an *Armor Battalion* in Arizona, attached to the *2nd Armored Division* under *'Round Out'*. This latter *Battalion*, it appears, has been replaced by a National Guard unit (the *2nd Battalion, 123rd Armor*); the Army Reserve *Battalion* may even have been inactivated. In addition, there are numerous Army Reserve unattached *Field Artillery Battalions* and *Groups*, and there are two *Special Forces Groups* with their sub units scattered across the nation. For example, the *12th Special Forces Group* has units in twelve different states. The *11th Special Forces Group (Abn)* has its headquarters at Fort Meade, Maryland, while the *12th Special Forces Group (Abn)* is headquartered in Arlington Heights, Illinois. I have also heard that at least one *'Mountain' Battalion* was recently activated in the Army Reserve - the *3rd Battalion (Mountain), 87th Infantry*. So far, this has been unconfirmed.

Most of the Army Reserve's manpower is contained in support-type units. In the following list, the city indicates the location of the unit headquarters:

310th Field Army Support Command	Washington, D.C.
300th Military Police Command (POW)	Livonia, Minnesota
220th Military Police Brigade	Gaithersburg, Maryland
221st Military Police Brigade	San Jose, California
290th Military Police Brigade (POW)	Nashville, Tennessee
412th Engineer Command	Vicksburg, Mississippi
416th Engineer Command	Forest Park, Illinois
411th Engineer Brigade	Ft. Tilden, New York
420th Engineer Brigade	Bryan, Texas
3rd Trans. Brigade (Railway)	St. Louis, Missouri
143rd Transportation Brigade	Orlando, Florida

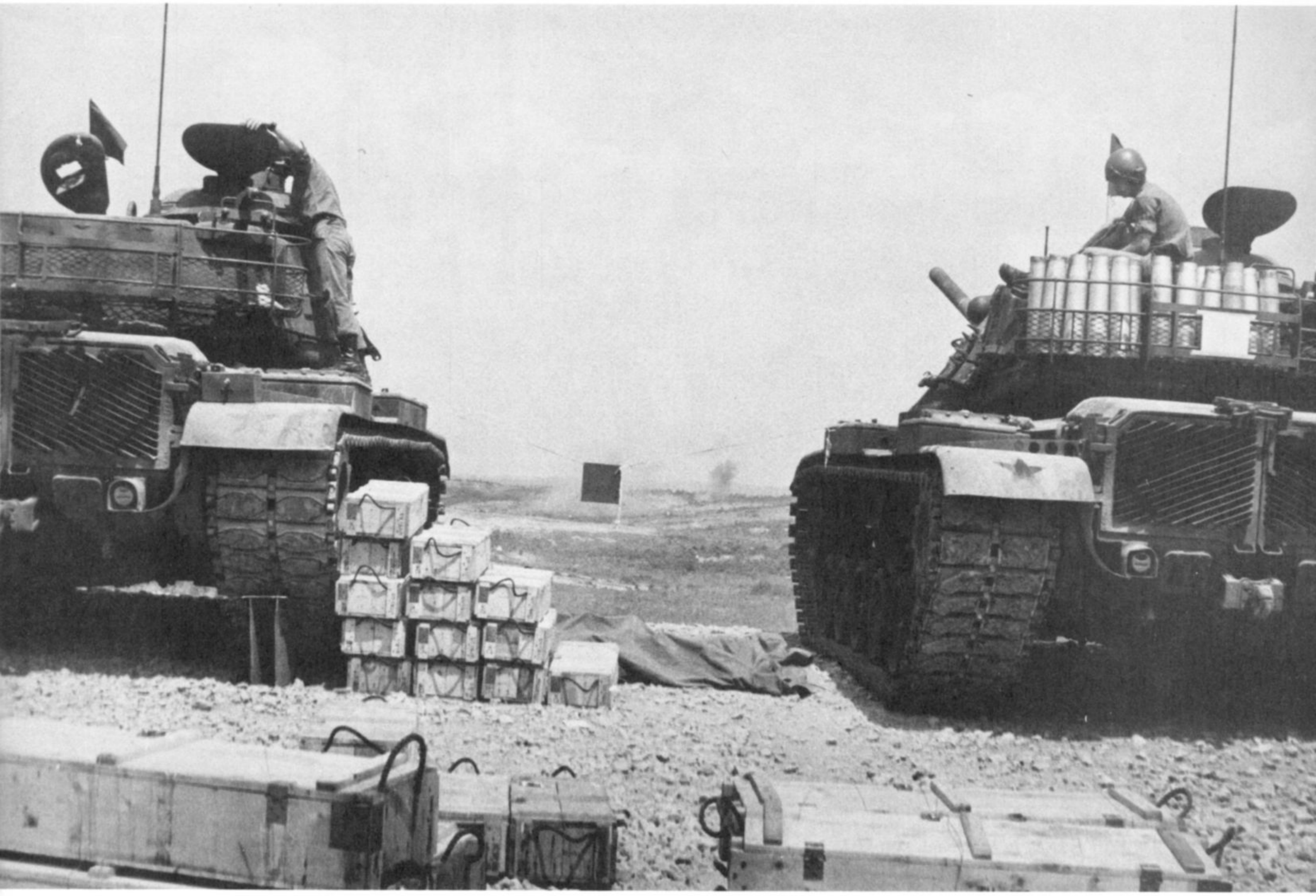


Photo Above: M-60 tanks of the 4/37th Armor *shown supporting a Kentucky National Guard unit during range firing. The square object between the two tanks is a placard [tied to the tanks by string] which warns dismounted tankers not to go forward while firing is going on. Note the shell bursts downrange and the unusual storage of empty 105mm brass in the bustle of the right tank. Photo Credit: Kentucky Military History Museum via Charles H. Bogart.*

425th Transportation Command (*Highway*)	Chicago, Illinois
103rd Support Brigade	Des Moines, Iowa
311th Support Brigade	Los Angeles, California
377th Support Brigade	New Orleans, Louisiana

Three units peculiar to the Army Reserve are the *Training Division'* (correct designation - *'Division* [*Training*]'), the *Army Reserve Command* (or *ARCOM*), and the *Maneuver Area Command* (or *MAC*). *Training Divisions* have several thousand men and are designed to train approximately 12,000 new recruits if mobilized. Each *ARCOM* commands the various Army Reserve units in its area (such as *Engineer*, *Signal*, *Transportation*, etc. *Battalions* and *Companies*). *MAC*'s are designed to run maneuvers for National Guard and Reserve units. Most *ARCOM*'s, *MAC*'s and *Training Divisions* are descendents of World War II. Infantry Divisions, and generally continue to wear their shoulder sleeve insignia.

ARCOM's

63rd ARCOM	Los Angeles, California
77th ARCOM	Flushing, New York
79th ARCOM	Colmar, Pennsylvania
81st ARCOM	Atlanta, Georgia
83rd ARCOM	Columbus, Ohio
86th ARCOM	Chicago, Illinois
88th ARCOM	Ft. Snelling, Minnesota
89th ARCOM	Wichita, Kansas
90th ARCOM	Ft. Houston, Texas
94th ARCOM	Boston, Massachusetts
96th ARCOM	Ft. Douglas, Utah
97th ARCOM	Ft. Meade, Maryland
99th ARCOM	Pittsburgh, Pennsylvania
102nd ARCOM	St. Louis, Missouri
120th ARCOM	Columbia, South Carolina
121st ARCOM	Birmingham, Alabama
122nd ARCOM	Little Rock, Arkansas
123rd ARCOM	Indianapolis, Indiana
124th ARCOM	Ft. Lawton, Washington

TRAINING DIVISIONS

70th Division (*Training*)	Livonia, Minnesota
76th Division (*Training*)	West Hartford, Connecticut
78th Division (*Training*)	Edison, New Jersey
80th Division (*Training*)	Richmond, Virginia
84th Division (*Training*)	Milwaukee, Wisconsin
85th Division (*Training*)	Chicago, Illinois
91st Division (*Training*)	Presidio San Francisco, CA
95th Division (*Training*)	Oklahoma City, Oklahoma
98th Division (*Training*)	Rochester, New York
100th Division (*Training*)	Louisville, Kentucky
104th Division (*Training*)	Vancouver Barracks, Washington
108th Division (*Training*)	Charlotte, North Carolina

MANEUVER AREA COMMANDS

75th MAC	Houston, Texas
87th MAC	Birmingham, Alabama

Note: Cities are Headquarters locations

COMBAT ARMS REGIMENTAL SYSTEM [*CARS*]

Photo Above: A National Guard M110 8-inch Self-Propelled Howitzer crew prepares to send a round down range during a Summer Camp live shoot. Note the projectile being picked up, while the men on the right get ready to open a propelling charge container. Photo Credit: Kentucky Military History Museum via Charles H. Bogart.

Guard units are organized slightly differently from Active Army units within *CARS*, in that each state has its own Parent Regiments. Thbis has resulted in many inactive Guard *CARS* Regiments. For example, from 1963 to 1968, there were many more Guard *Infantry Divisions* since Guard units had a lower percentage of their authorized personnel than they do today. Since each Guard *Infantry Division* had an *Armor Battalion*, each state with an *Infantry Division* needed an *Armor Regiment*, and now many of these have no active units. It is fairly easy to determine which state most of the inactive Guard *Armor Regiments* come from:

137th Armor	*37th Infantry Division*	Ohio
245th Armor	*45th Infantry Division*	Oklahoma

The only cases in which a Guard *CARS Regiment* has units in more than one state are: 1) the two *Armored Cavalry Regiments* which are located in two states each, and 2) the *Divisional Armored Cavalry Squadrons* for the four Divisions which are located in more than one state.

Most of the Army Reserve units in *CARS* belong to Active Army Parent Regiments:

6th Battalion, 68th Armor - 157th Sep. Infantry Brigade (Mech)
3rd Battalion, 16th Infantry - 187th Sep. Infantry Brigade

While some Parent Regiments are strictly Army Reserve:

1st Battalion (Mech), 313th Infantry - 157th Sep. Infantry Bde.
1st Battalion, 409th Infantry - 205th Sep. Infantry Brigade

Army Reserve units assigned to *Training Divisions* also use a modified *CARS* system, even though *Training Divisions* are not combat arms units. For example:

3rd Battalion, 330th Infantry - 70th Division (Training)
1st Battalion, 400th Infantry - 100th Division (Training)

EQUIPMENT AND ORGANIZATION

Guard and Reserve units are organized identically to the Active Army. It is in the area of equipment, especially armored vehicles, where the Guard and Reserve somewhat lag behind. Armor units use either the M48A1, M48A3, M60, or M60A1 Main Battle Tanks. Armored Cavalry units use the M48A1, M48A3, or M551 Sheridans. The National Guard (as of June 1975) had about 600 M60's and M60A1's and should receive another 300 next year. Starting in September 1975, all Guard M48A3's (with 90mm gun) are due to be turned in and converted to M48A5 status (with 105mm gun); these are due to start returning to their units in December. The M114 is another vehicle in extremely short supply; many units instead use Jeeps mounting machine guns. (Of course, this is no real deficiency.) Attack Helicopters (AH-1G *Huey Cobras*) were issued to the first Guard unit (*Troop E (Air), 19th Cavalry* of the *29th Separate Infantry Brigade*) during the Summer of 1974.

In smaller towns, Guard *Companies/Troops/Batteries* are frequently split between two (and sometimes three) Armories. The main part of the unit is designated, for example:

Troop E (-), 2nd Squadron, 104th Armored Cavalry Regiment
Company B (-), 1st Battalion, 803rd Armor

and the smaller detached section is designated, for example:

Detachment 1, Hq & Hq Company, 2nd Bn, 120th Infantry... or
Troop C (Part), 1st Squadron, 104th Armored Cavalry Regiment

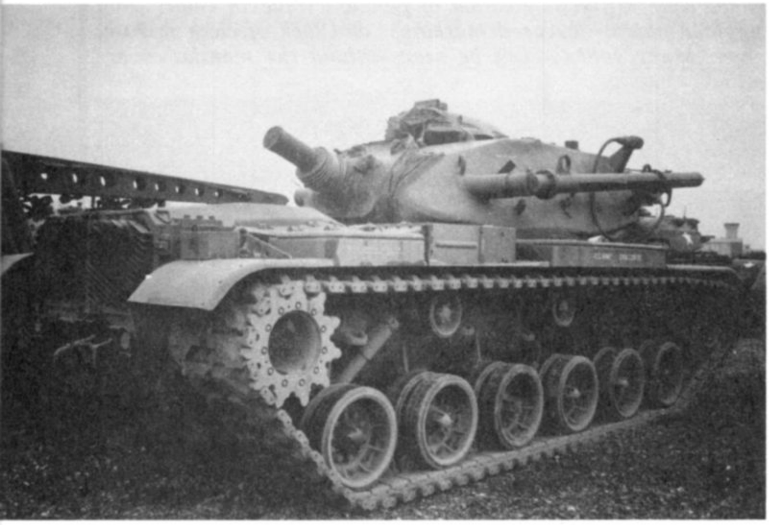
RECENT DEVELOPMENTS

Most of the recent changes have occurred in the National Guard. In the Fall of 1973, the *30th Armored Division (Division Base* and *3rd Brigade* - Tennessee; *1st Brigade* - Mississippi; *31st Brigade* - Alabama) was deactivated and replaced by a *Separate Armored Brigade* in each state along with a *Non-Divisional Mechanized Brigade* and an *Engineer Brigade*, both in Tennessee. The *30th Infantry Division (Mech) (Division*

Base and *1st Brigade* - North Carolina; *2nd Brigade* - South Carolina; *3rd Brigade* - Georgia) was replaced by a *Separate Mechanized Brigade* in each state and an *Engineer Brigade (Construction)* in North Carolina.

At the same time, in Texas, the *72nd Separate Infantry Brigade (Mech)*, the *36th Separate Infantry Brigade*, the *71st Separate Airborne Brigade*, and the *49th Armored Brigade (Non-Divisional)* were combined to form the *49th Armored Division* and the *36th Airborne Brigade (Non-Divisional*]. In California, the *40th Separate Armored Brigade*, the *40th Separate Infantry Brigade*, and the *49th Separate Infantry Brigade* were combined to form the *40th Infantry Division (Mech)* and the *49th Infantry Brigade (Non-Divisional)*.

These reorganizations show a change in the alignment of the National Guard from a 'Light' (Infantry and Airborne) to a 'Heavy' (Armored and Mechanized) Army. While the number of types of Divisions remained the same, and the number of *Separate Brigades* remained equal (18), before the reorganization there had been five 'Heavy' *Brigades* (one *Armored*, four *Mechanized*) to thirteen 'Light' *Brigades* (12 *Infantry*, 1 *Airborne*). After the reorganization, there were nine 'Heavy' *Brigades* (3 *Armored*, 6 *Mechanized*) to nine 'Light' *Brigades* (all *Infantry*). In addition, one *Non-Division Armored Brigade* (the *49th*) was lost in exchange for three new *Non-Divisional Brigades* - one *Mechanized*, one *Infantry* and one *Airborne*.†

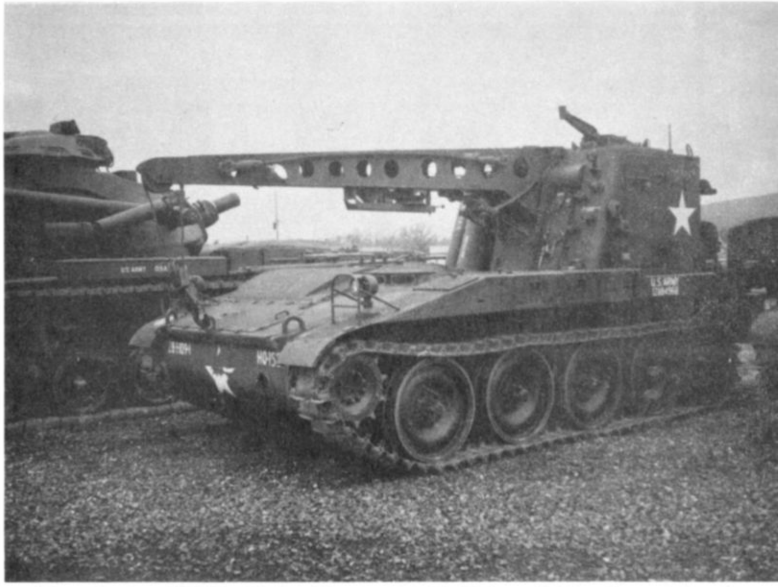


Above: A Pennsylvania National Guard M728 Combat Engineer Vehicle (CEV) at Indiantown Gap. Note the short-barreled 165mm Demolition Gun which this modified M60 is equipped with. *Photo Credit: Author*

Since 1973, there have been other changes - with the deactivation of the *Army Air Defense Command (ARADCOM)*, eleven Guard *Nike-Hercules Air Defense Artillery Battalions*, with 27 *Firing Batteries*, were also retired. Each of these Guard *ADA Battalions* had a *Headquarters & Headquarters Battery* and two or three *Firing Batteries*.

One noticeable difference between Active Army and National Guard Divisions was the latters complete lack of *Air Defense Artillery* units. Under a new program, titled *'Association'*, eight Guard *SP Automatic Weapons Air Defense Artillery Battalions* (equipped with M42 'Dusters' - the Guard has not yet received the 'Vulcan' or the 'Chapparal') were attached to Guard Divisions, even though in many cases the *ADA Battalions* were separated from these Divisions by hundreds of miles. The *111th Artillery Brigade (Air Defense)* provides four of the *Battalions* in this program. In addition, the *111th Brigade* is 'associated' with the Active Army's *31st Air Defense Artillery Brigade*.

The *107th Armored Cavalry Regiment*, which had been a multi-state unit with its *3rd Squadron* in West Virginia since 1968, became a one-state unit in the Spring of 1974, with the redesignation of an independent Ohio Guard *Infantry Battalion* as the *107th's 3rd Squadron*. The *Armored Cavalry Squadron* in West Virginia was retained as an independent *Squadron*, now designated as the *1st Squadron, 150th Armored Cavalry*.

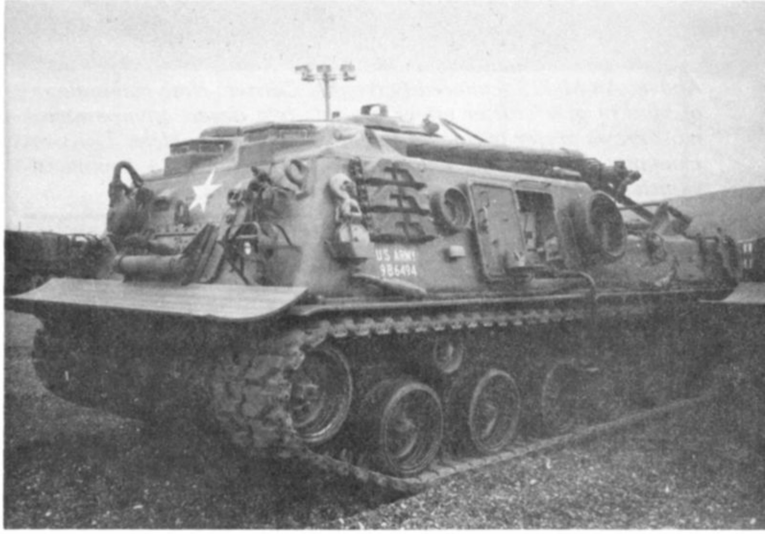


Above: An M578 Light Recovery Vehicle of Headquarters Company, 1st Battalion (Mech), 109th Infantry, 28th Infantry Division, *Pennsylvania Army National Guard, stored at Fort Indiantown Gap and photographed by the author in December 1974. This vehicle is used as prime recovery for the M113 APC.*

To increase readiness, the Pentagon has been consolidating entire Divisions in States which are populous enough to support them. A few years ago, this was avoided, since activation of a one-state Guard Division would have meant that most, if not all of that state's National Guardsmen would be away from their families, out of the job market, etc. This general move was begun in the Fall of 1973, with the reorganization previously recounted, and it continued in the Spring of 1975. Four states were involved, and before the reorganization, the major units which were involved were:

Pensylvania National Guard

Division Base and *55th Brigade*	*28th Infantry Division*
56th Brigade	*42nd Infantry Division*
Hq, Air Cav Trp, 1st & 2nd Squadrons,	*104th Armd Cav Regt.*



Above: A photo of an M88 Armored Recovery Vehicle taken at the same time and place as the photo above of the M578. Note the open side hatch and the extended step. This vehicle is still in use as the main recovery tool of Armor Battalions.

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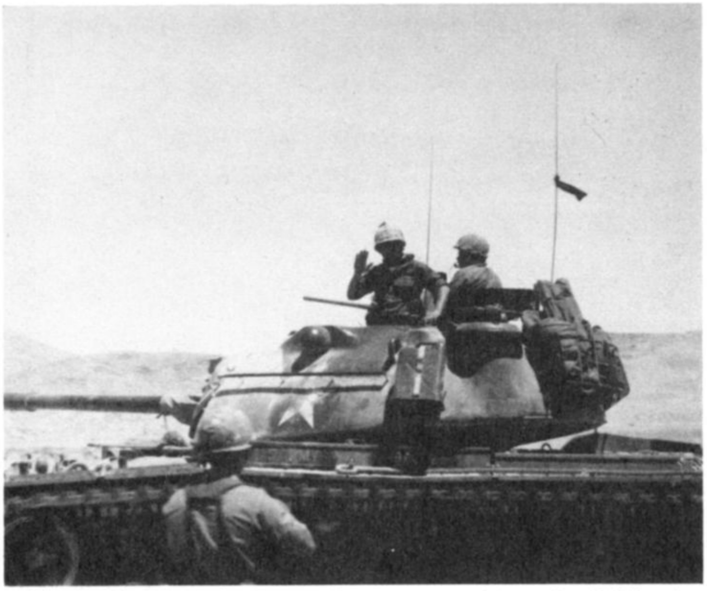
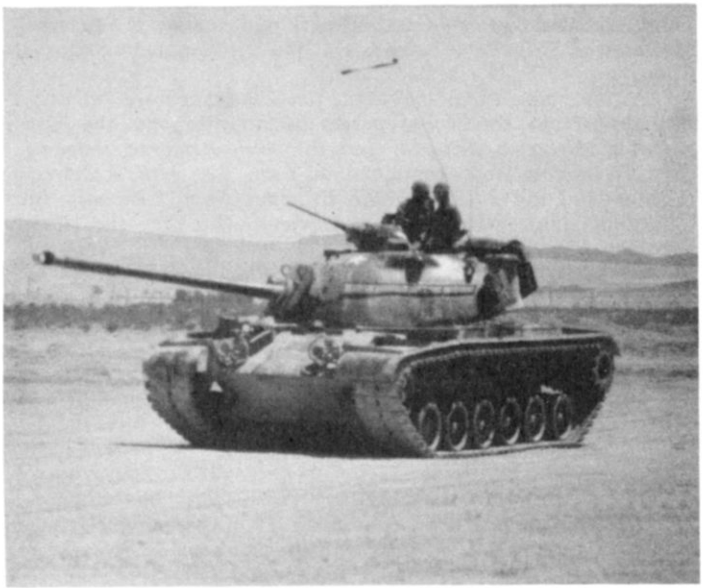
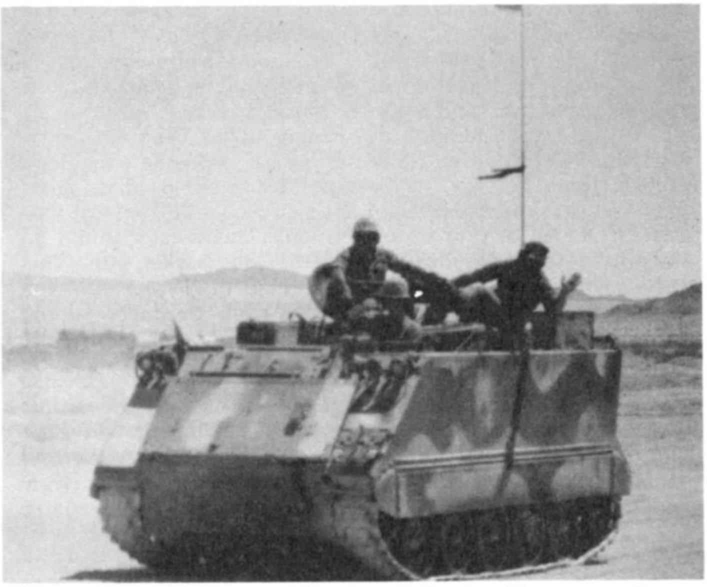
† The *49th Armored Brigade* was organized as a *Non-Divisional Armor Brigade*, having only a *Headquarters & Headquarters Company* and two *Armor Battalions*.



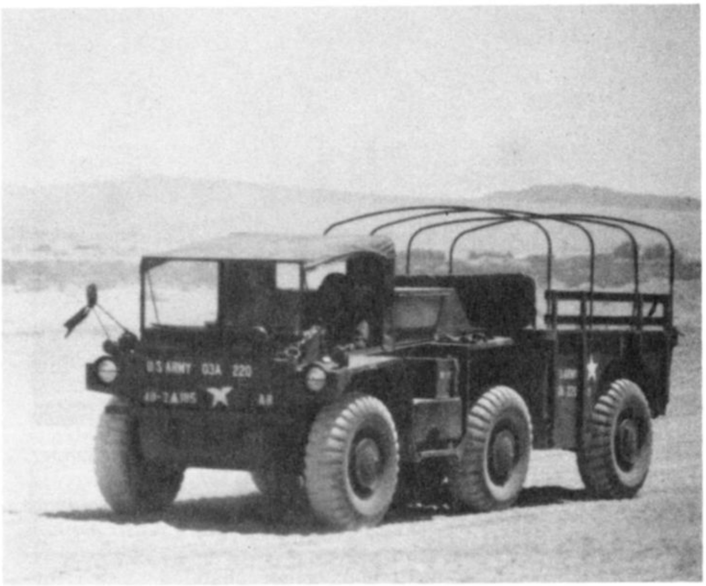
Above: Close-up of turret and upper suspension of a California National Guard M-48 tank. Note flag on radio antenna to designate unit [much like British Western Desert pennants]; use of sand to cover and obscure unit markings; and absence of tank-type helmets on commander and loader.



Above: An overall photo showing a California National Guard M-48. Note different position of pennant [blue in color] from previous photo; obscured markings; and lack of cloth mantlet cover. Many vehicles can be seen without the mantlet cover.



Above: An M-113 Armored Personnel Carrier. Note camouflage of sand to give scatter effect. As this is a desert environment, most crews prefer to ride on the outside of the vehicle. The two pennants (yellow and blue) are used to denote a command vehicle; in this case, a company headquarters vehicle.



Above: A photo of a California National Guard M-561 'Gamma Goat' Utility Vehicle from the 2nd Battalion, 185th Armor. *Note lack of camouflage on this vehicle; articulation is visible even on this terrain; and low pressure (12 p.s.i.) tires. All Gamma Goat drivers are required to wear ear plugs or mufflers... a comment on the amount of engine noise. These four photos were provided for use in this article by Rob Harvan; the pictures were taken during the* 40th Infantry Division (Mech) *summer training at Fort Irwin, California.*

Maryland National Guard	
58th Brigade	*28th Infantry Division*
Virginia National Guard	
116th Brigade	*28th Infantry Division*
New York National Guard	
Division Base, 1st and *2nd Brigades*	*42nd Infantry Division*
27th Brigade	*50th Armored Division*

In the reorganization, the entire *28th Infantry Division* was relocated in Pennsylvania, and the entire *42nd Infantry Division* was relocated in New York. The *104th Armored Cavalry Regiment*, the oldest *Armored Cavalry Regiment* in the National Guard, was inactivated. (New Jersey's *3rd Squadron* of that regiment was reorganized as an independent *Infantry Battalion (Mech)*. Maryland and Virginia units were replaced by a *Separate Infantry Brigade* in each state. This reorganization has yet to be finalized, but the relocations are as follows:

Pennsylvania National Guard
28th Infantry Division
New York National Guard
42nd Infantry Division
Maryland National Guard
58th Separate Infantry Brigade
Virginia National Guard
116th Separate Infantry Brigade

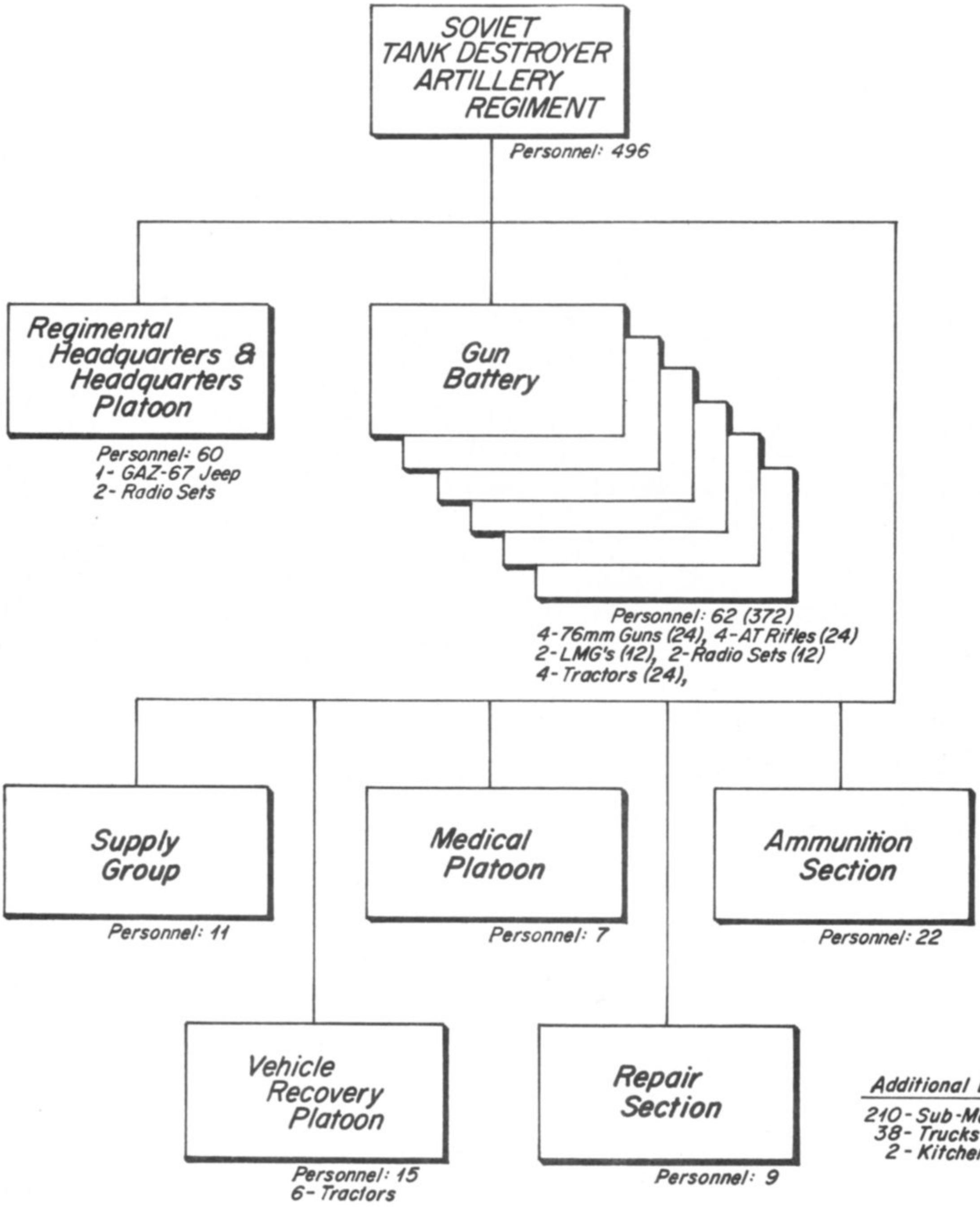
This leaves the *50th Armored Division* understrength by

Continued on Page 40

ORGANIZATION CHART:

SOVIET TANK DESTROYER ARTILLERY REGIMENT

DATE: SUMMER 1944
by W.Larson & J.Steuard



Soviet Tank Destroyer Artillery Regiment — Personnel: 496

Regimental Headquarters & Headquarters Platoon — Personnel: 60
1- GAZ-67 Jeep
2- Radio Sets

Gun Battery — Personnel: 62 (372)
4-76mm Guns (24), 4-AT Rifles (24)
2-LMG's (12), 2-Radio Sets (12)
4-Tractors (24),

Supply Group — Personnel: 11

Medical Platoon — Personnel: 7

Ammunition Section — Personnel: 22

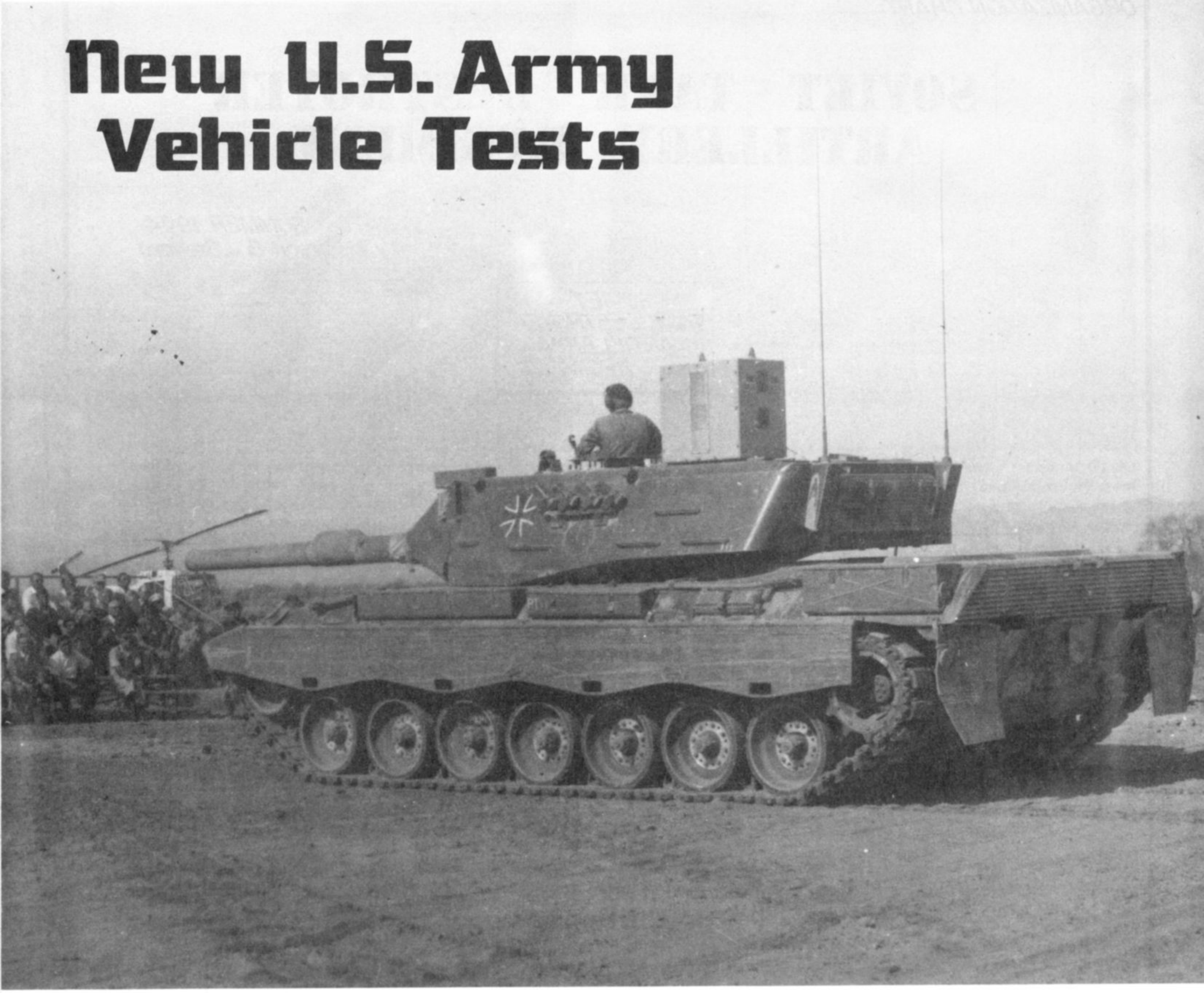
Vehicle Recovery Platoon — Personnel: 15
6-Tractors

Repair Section — Personnel: 9

Additional Equipment
210 - Sub-Machine Guns
38 - Trucks
2 - Kitchen Trailers

Source: OKW; Abt.Fremde Heere Ost; „Kriegsgliederung eines Panzer-Zerstörer-Artillerie-Regiment" KStN Nr. 08/539 v.15.7.43 (Natl.Archives, T78, R486, Frame No.6470406)

New U.S. Army Vehicle Tests



by Col. Robert J. Icks, Retd.

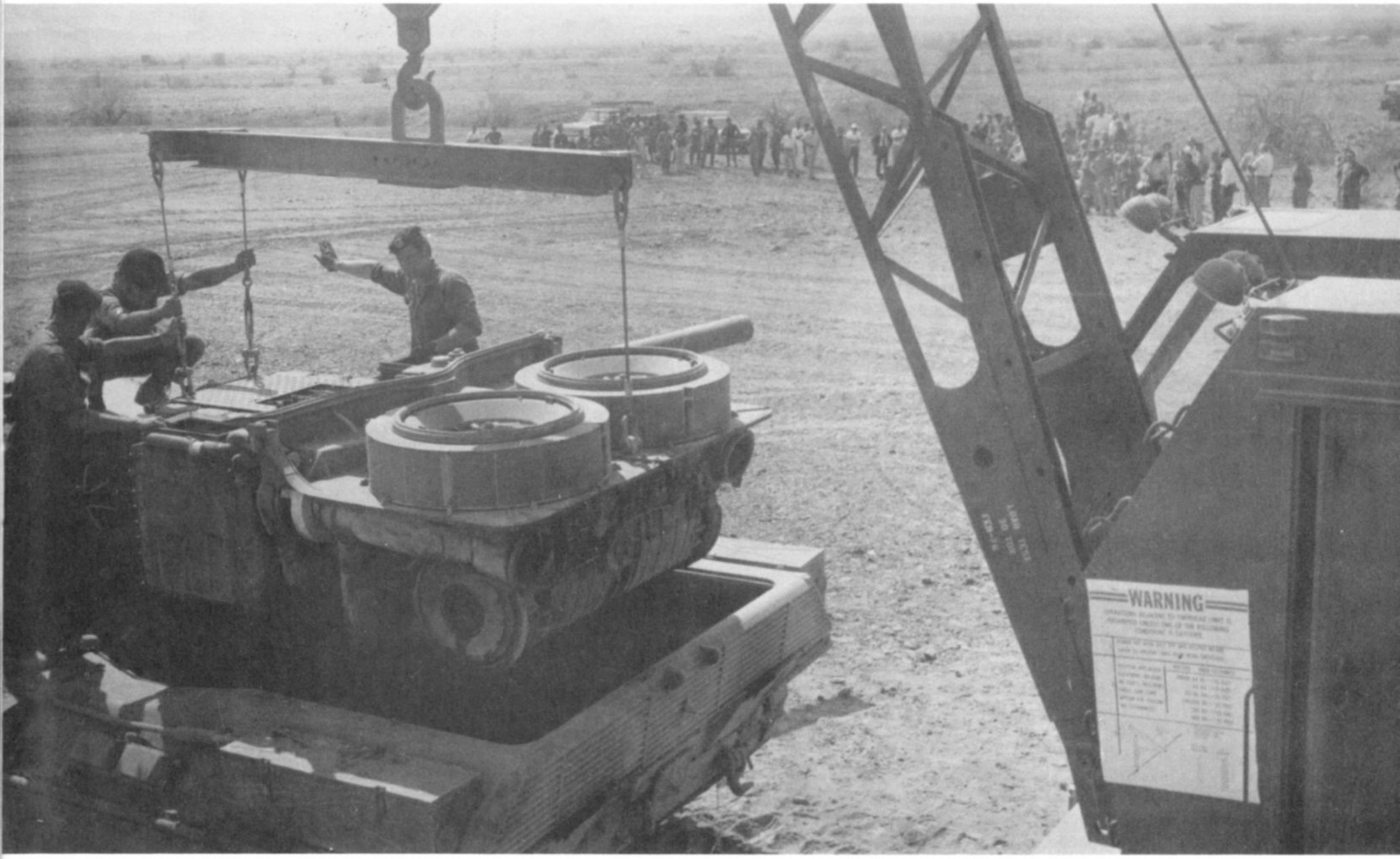
At a recent demonstration attended by representatives of England, France and West Germany at Yuma Proving Ground, Arizona, the German *Leopard 2* was tested under desert conditions. The *Leopard* is in service in Belgium, Denmark, Italy, the Netherlands, Norway and Spain, in the last case fitted with a Belgian gun. *Leopards* have also been tested in Australia, Canada and France.

The vehicle tested at Yuma mounts a 120mm smoothbore gun, three machine guns and six smoke dischargers. It is powered by a Daimler-Benz 12-cylinder 1500-horsepower engine with a supercharger, and it has the same transmission as the German version of the MBT 70: the *HSUL 3543* hydro-mechanical planetary type with torque converter and bypass clutch providing four forward and four reverse speeds. Steering is combined stepless static-hydrodynamic. The German crew demonstrated a change of engines which required less than nineteen minutes.

Torsion bar suspension is used. There are seven road wheels with shock absorbers on 1, 2, 3, 6 and 7, and four track support rollers, the latter covered by skirts. Tracks are center-guide with removable rubber pads and rubber doughnut pins; 0.1835 pitch and 0.635 meters in width. The tank is equipped with main gun stabilizer, laser rangefinder and electro-hydraulic fire control. Special filters are fitted over the hull air intake louvers. The retractable Xenon light was covered with a box atop the turret. This tank can wade up to 2.38 meters with snorkel. It weighs 50.5 metric tons. Dimensions are in meters: 7730 (9740) x 3540 x 2490.

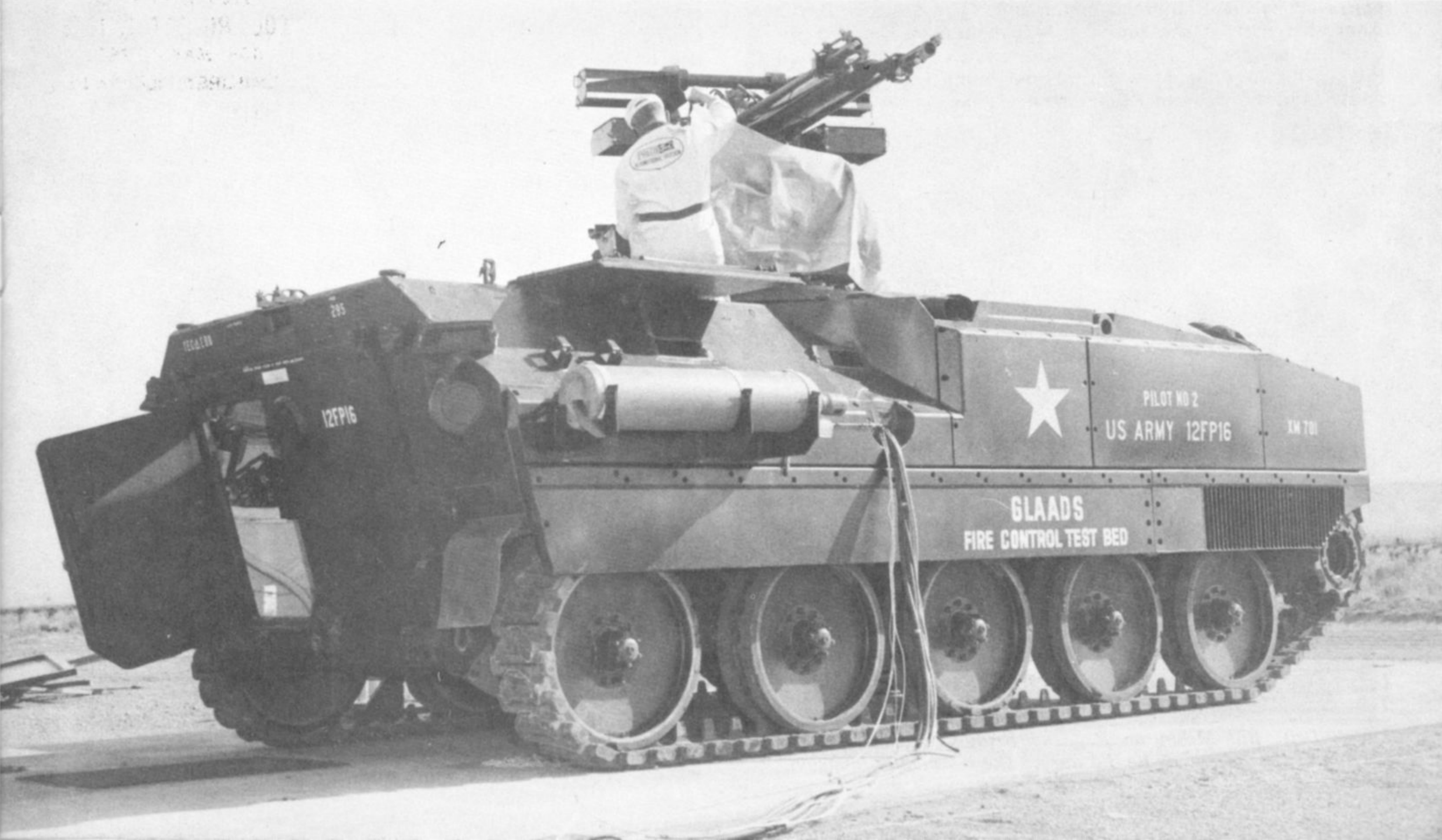
Another demonstration took place at Fort Bliss, Texas, where the *GLAADS* (*G*un, *L*ow *A*ltitude, *A*ir *D*efense *S*ystem) was shown by Philco, the responsible contractor together with Rock Island Arsenal. This vehicle was a test rig with an *MICV-65* (XM-701) as a basis and having a high, semi-turret which mounted the new twin 25mm PPB-25 dual-feed cannon. This weapons system has a high rate of fire almost equal to that of the more familiar Vulcan cannon. Since the October 1973 Sinai War, the U.S. Army has become much more interested in mobile anti-aircraft weapons systems.

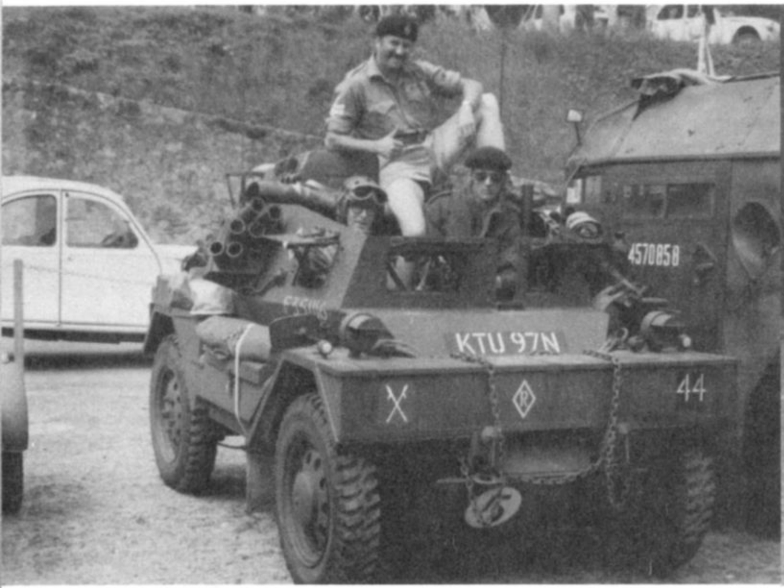
Above: The West German Leopard 2 *being demonstrated at Yuma Proving Ground. Photo Credit: U.S. Army by SP5 Larry R. Drummond.*

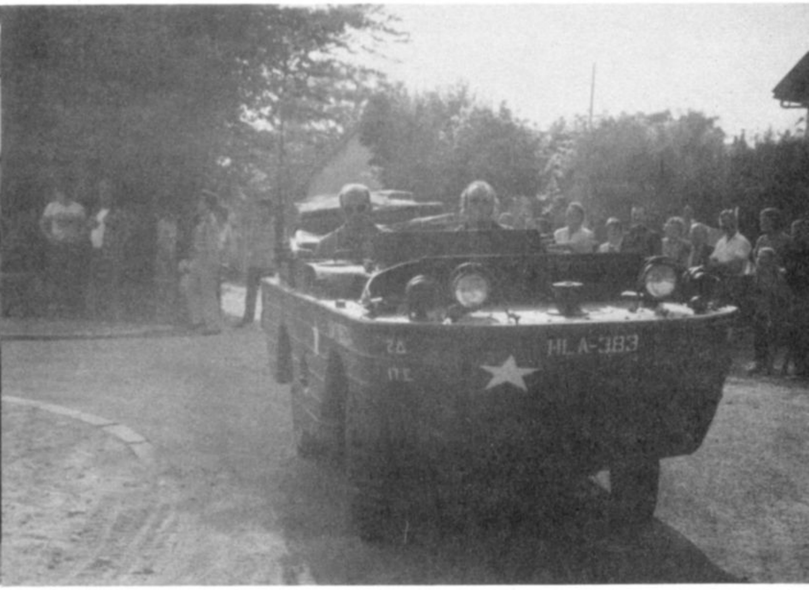


Above: West German Bundeswehr Leopard *tank crew demonstrating an engine change in less than 19 minutes. Photo Credit: U.S. Army by SP5 Larry R. Drummond.*

Below: U.S. Army GLAADS *test rig being demonstrated to the U.S. Army Air Defense Board at Fort Bliss, Texas. Photo Credit: U.S. Army by Carlos Mendoza.*







A PHOTO REPORT ON . . .

The 1975 'Return to D-Day' Tour

BY GARY SIMPSON

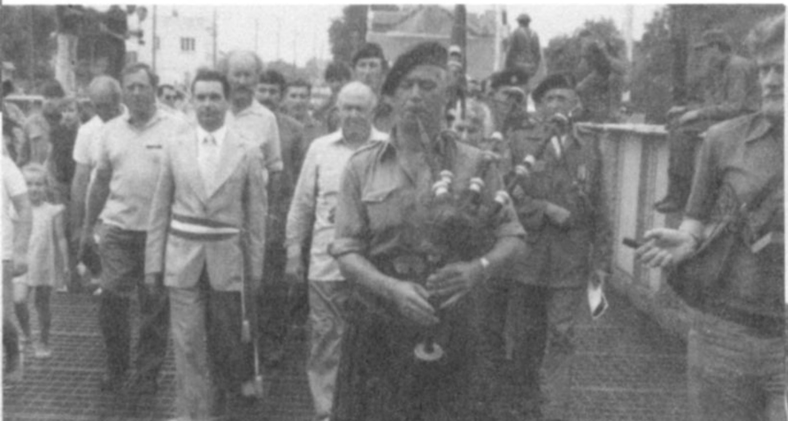
'The Return to D-Day' Tour of 1975 was organized by Mr. Peter Gray, and it was one trip that this writer will never forget. It is my opinion that this tour was extremely well-planned and laid-out and that the people involved were very capable.

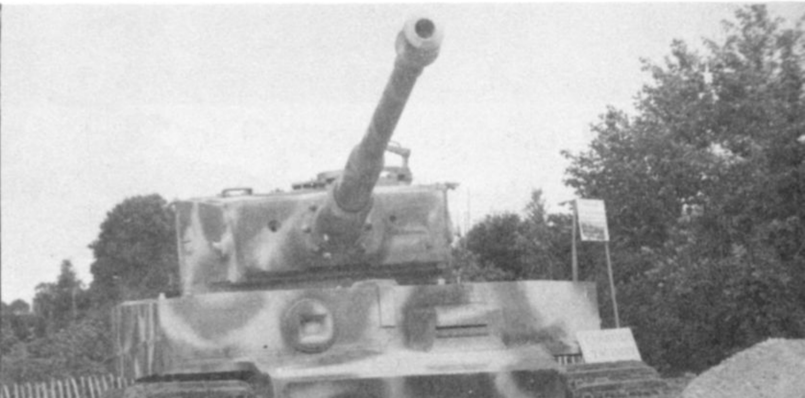
After sailing from Southampton, England on July 28, 1975, the 'D-Day Convoy' landed at Cherbourg, France. The convoy headed directly for St. Mere Eglise to visit the Airborne Museum and Utah Beach. During the visit to the town, we also looked at the church where John Steele landed during the airborne landings. (If you remember, this was the part portrayed by 'Red' Buttons in the film 'The Longest Day'.) After this part of the tour, at 1430 hours, we headed for Carentan to visit the *101st Airborne Division* Museum located there. This museum proved very interesting; many weapons and a captured German *Kübelwagen* are on display. Then, at 1600 hours, the convoy headed for St. Lo, where we bivouaced overnight.

July 29th, the next day, was used to visit Bayeux, Omaha Beach and Arromanches. At Arromanches, we visited the new museum, which houses a large collection of weapons and also a large scale model of the Mulberry harbors which were set up in the bay at Arromanches. A good number of these 'Mulberries' are still in the bay and one can see how they were sitauted.

On July 30th, we headed for Coutances, where we were greeted by the town's population. There was a lot of enthusiasm shown for our tour and we were hosted at a Champagne reception. At 1400 hours, we headed for Brehal and bivouac for the night.

July 31st. During the early part of the day, we attended a ceremony to honor the death of a French resistance hero. This





Upper Left: One of the best restored vehicles on the tour, this is Tony Hayter's Daimler 'Dingo' armored car

Lower Left: Bill Millin on Pegasus Bridge, re-enacting his playing of the 'pipes' as he did during the Normandy invasion.

Upper Right: Another of the rare vehicles on the tour, this is Peter Gray's Amphibious Jeep [or 'Seep']. Note the U.S. markings, broken only by the British license number.

Lower Right: The German Tiger I. at Vimoutiers. Note this this is a late vehicle with Panther-style cupola and Tiger II. road wheels. A future article will detail this tank...

was certainly a poignant moment, bringing memories of the valor and courage of the French resistance who fought the Germans throughout the Normandy battles. After the ceremony, we visited Granville. At this time, the French military vehicle enthusiasts joined us for the remainder of the tour.

August 1st and 2nd found us at Avranches, where we were given a dinner by the citizens of the town; everyone had a good time and there was plenty of food and drink. While in Avranches, we visited the Patton Memorial and the Americans who were present in uniform performed a short ceremony and placed a wreath at the foot of the memorial. Following this, we preceded to Mortain, where we were greeted by a very enthusiastic crowd of the town's citizens. After a speech by the mayor, we were hosted to another Champagne reception.

August 3rd found us on the road to Flers and Argentan, where we were greeted by literally hundreds of people lining the roads. These were citizens from all of the little towns in the area, and their enthusiasm made us all very happy (to say the least), and made the whole trip seem more worthwhile. August 4th proved ot be an important day, as we arrived in the 'Falaise Pocket' area. We were given a guided tour of the area by Eddy Florentine, whose description of the fighting was very, very interesting. On this day, we also visited the famous *'Tiger I.* heavy tank on display at Vimoutiers. We were given a fine talk over our P.A. set telling us how the vehicle was left there and the interesting story behind it. (A 'Vehicle Close-up' on this tank will follow.)

On August 5th, we passed through St. Foy de Montgom-

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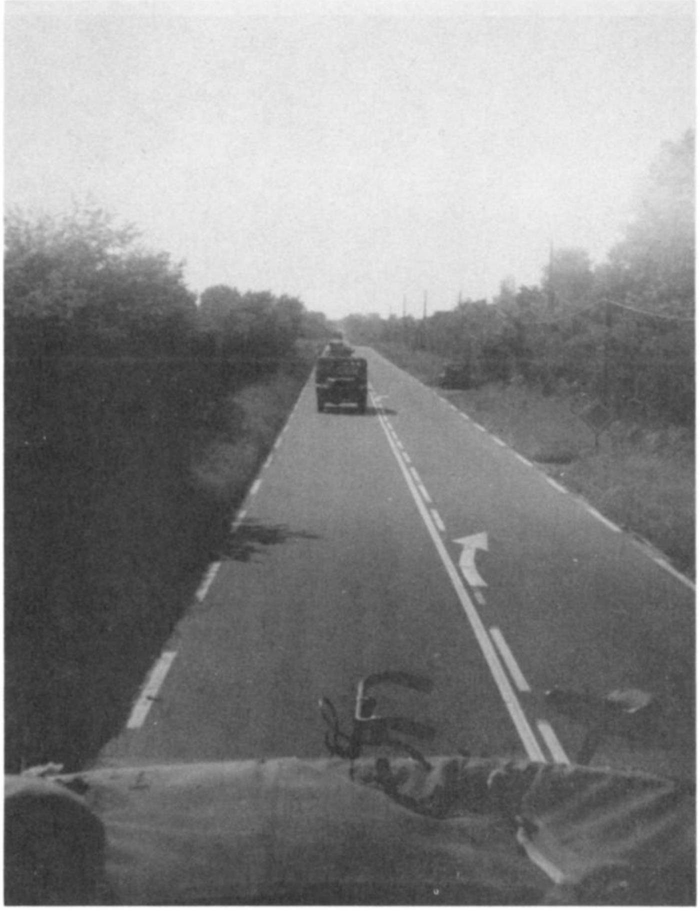
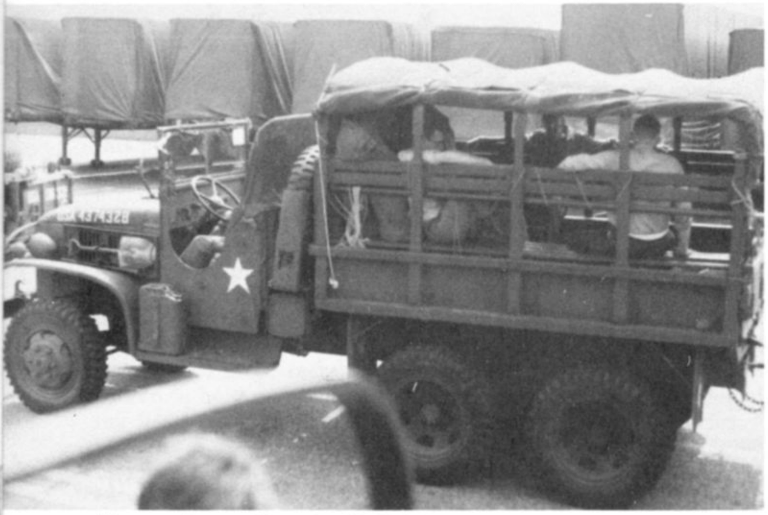
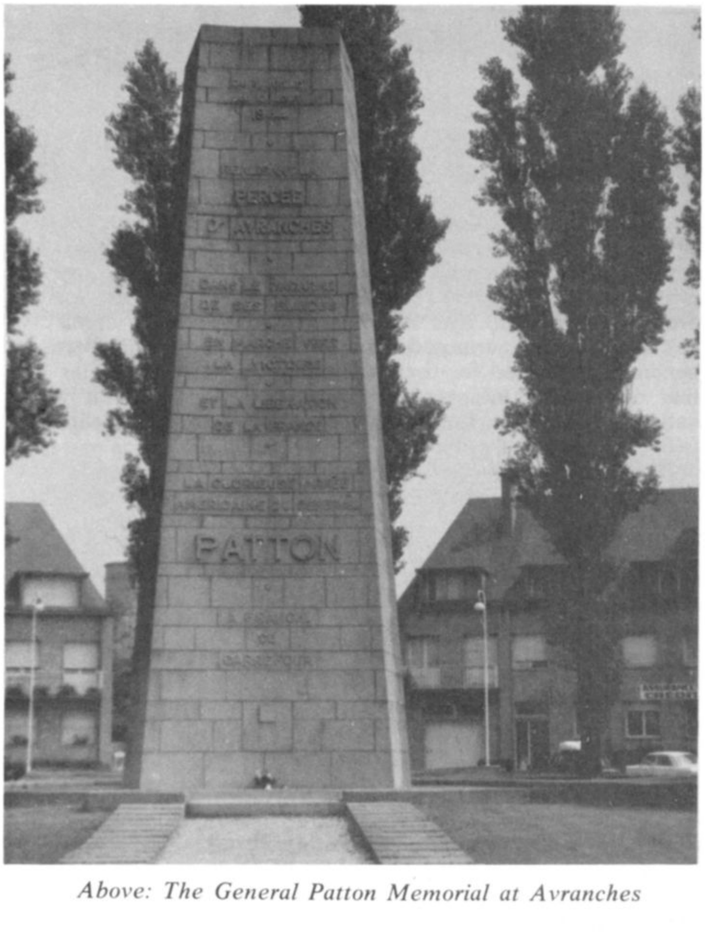


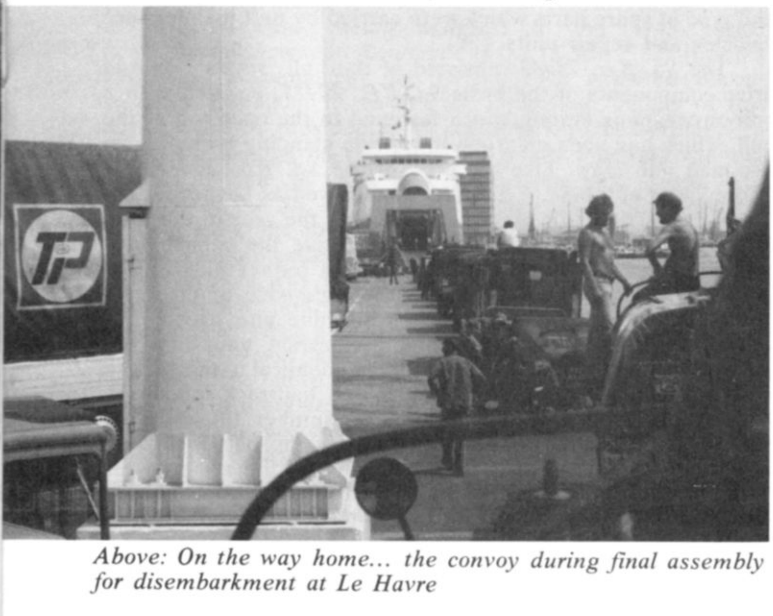
Above: Just one of the photos of the 2½ mile long convoy of vehicles; this photo was taken from the 2½-ton DUKW that the writer was traveling in.



Above: An ex-French GMC 2½-ton Truck which is owned by Peter Gray. Note the stowed shovel and gas can.



Above: The General Patton Memorial at Avranches



Above: On the way home... the convoy during final assembly for disembarkment at Le Havre

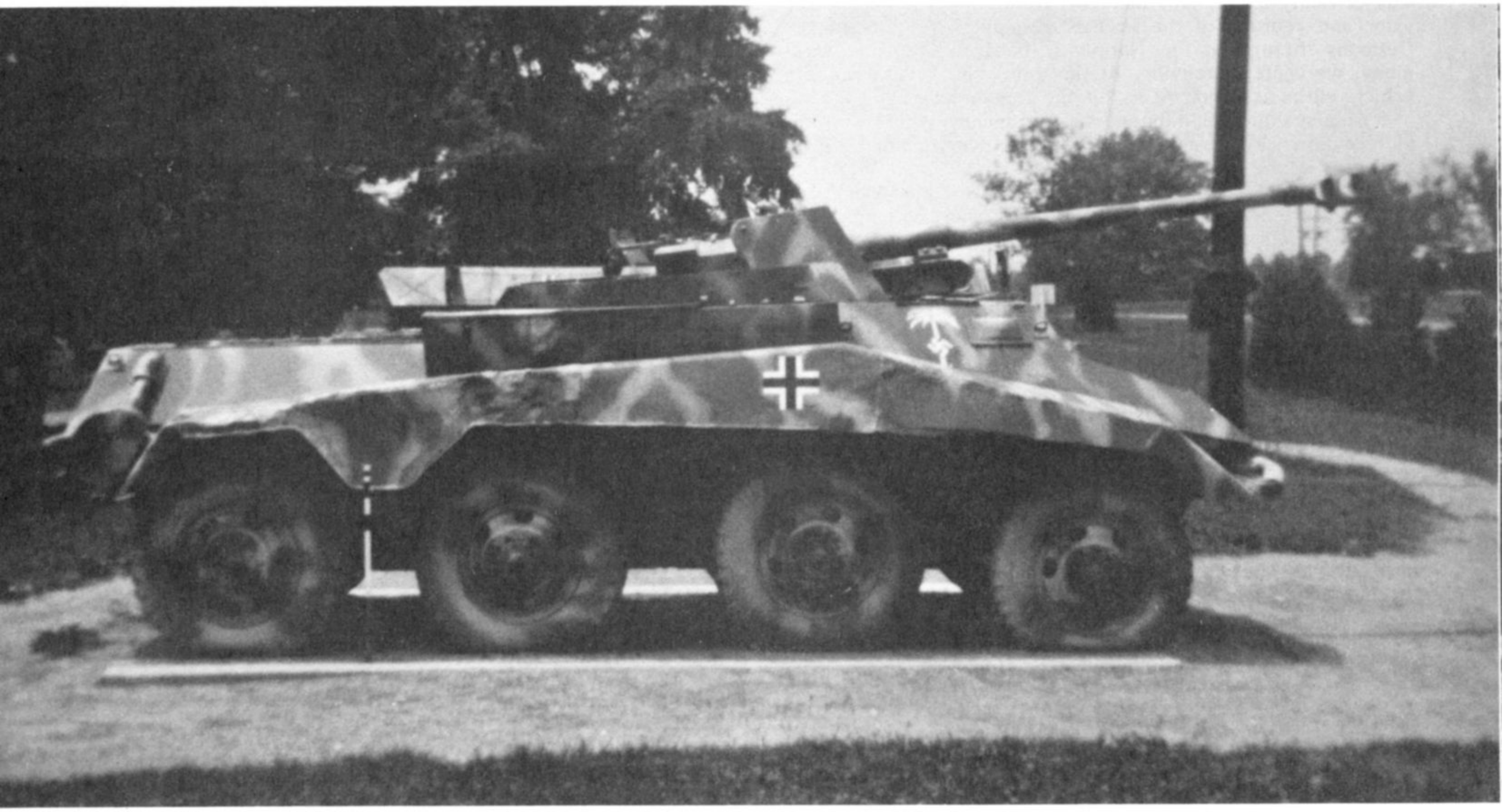


Photo Above: A right side view of what is probably the last surviving Sd. Kfz. 234/4 *armored car, located at the Patton Museum, Fort Knox, Kentucky. The markings shown on this vehicle are totally spurious. Photo taken in July 1974 by David Brownell.*

German Late-War Armored Cars

Part 2

by J. Steuard

Part One of this article, which covered the basic development of the *Sd. Kfz. 234* and the first (chronological) variants of this armored car, appeared in Volume 5, Number 1 of *AFV-G2*. Readers are referred to this earlier issue for basic drawings of the *Sd. Kfz. 234/1* and *Sd. Kfz. 234/2 'Puma'*.

As German armored car reconnaissance units were generally organized for their missions in a manner similar to that of armored infantry (or *Panzergrenadier*) units, it was entirely logical for the *Heeres-Waffenamt* (Army Weapons Office) to request the development of a support weapon variant on the late-war 8-wheeled armored car chassis. In general, the design of this vehicle followed the precident established with the earlier *Sd. Kfz. 233*. Like this earlier vehicle, and also its support-weapon halftrack 'brother', this new armored car mounted the *7.5cm KwK 37*, short-barreled (L/24) cannon which earlier had been carried by the *Panzer IV.* medium tank. Although this gun was obsolete for general tank/anti-tank use, lacking an effective anti-tank performance except with shaped-charge ammunition, it could still perform in an artillery type of support role. In this category of work, it fired high explosive and smoke shells against enemy positions, both real and assumed, in support of the reconnaissance or combat platoons.

Although it might be assumed that having the same weapon mounted on both an armored car and a halftrack created a redundant situation, this was not so. With a complicated maintenance situation which involved extensive numbers of spare parts and thoroughly trained mechanics, it was necessary to 'standardize' the types of vehicles within a given unit. Thus, in a heavy armored car unit equipped with the *Sd. Kfz. 234/1* cars (such as the *Panzerspäh-Kompanie Typ 'D'* organized under *KStN 1162d*), the 'fourth' or 'heavy' support platoon had six, nearly-identical, *7.5cm* armed *Sd. Kfz. 234/3* vehicles; these nearly-identical vehicles simplified the amount and type of spare parts which were carried by unit maintenance vehicles and repair units.

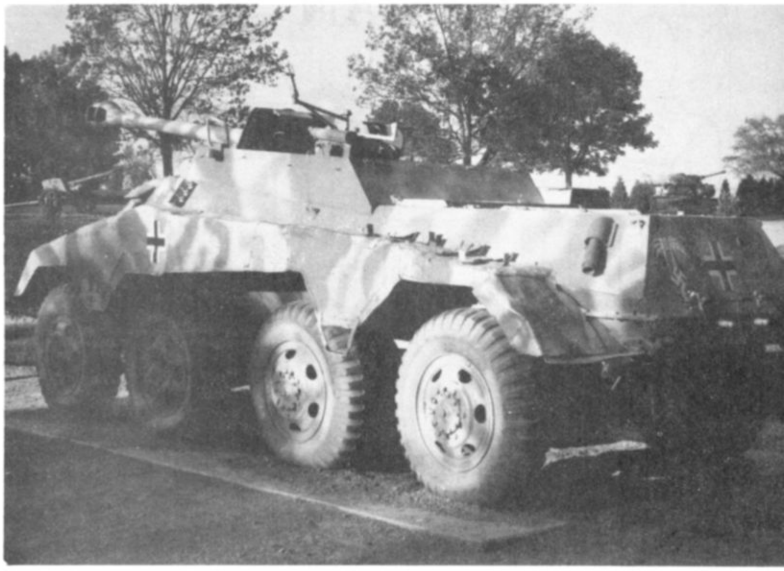
The *Sd. Kfz. 234/3* consisted of the hull, suspension and drive components of the basic *Sd. Kfz. 234/1*, coupled with a bolt-on weapons system which fastened to the open top of the hull, which had been enlarged to provide standing room for the two-man gun crew. Like the crew of the *Sd. Kfz. 234/1*, the Commander of the *Sd. Kfz. 234/3* also served as Loader for the *7.5cm* gun. The Radio Operator sat facing the rear in the hull; he also served as a second driver (to drive the vehicle in a reverse direction). A coaxial machine gun (either a *MG34* or the later *MG42*) was mounted on the right side of the main armament on an abbreviated heavy machine gun tripod; this weapon had a limited traverse and elevation built into the mount. This weapons system was almost identical to the version mounted on the *Sd. Kfz. 251/9* armored halftrack (photos of which appeared in *AFV-G2*, Volume 4, Number 10), differing only in that the external armored sides of the bolt-on system were bent inward to conform to the shape of the armored car hull top. Ammunition stowage for the main gun consisted of 60 rounds, according to most sources, although it is not clear to this writer how 60 rounds of bulky *7.5cm* ammunition could possible fit in the confined fighting compartment.

The *Sd. Kfz. 234/4* anti-tank armored car resulted from a personal order from Adolf Hitler in early 1944; this order emphasized production of self-propelled anti-tank vehicles utilizing the *7.5cm Pak 40*, in a major attempt to provide additional mobile anti-tank weapons systems to counter the increasing number of Soviet tanks on the Eastern Front. A number of different vehicles resulted from this order, including an anti-tank version of the ex-French *S 307(f)* Somua halftrack, the German *Sd. Kfz. 251/22* armored halftrack, the anti-tank version of the German *Raupenschlepper Ost* gun tractor, and the heavy armored car which is featured in this article.

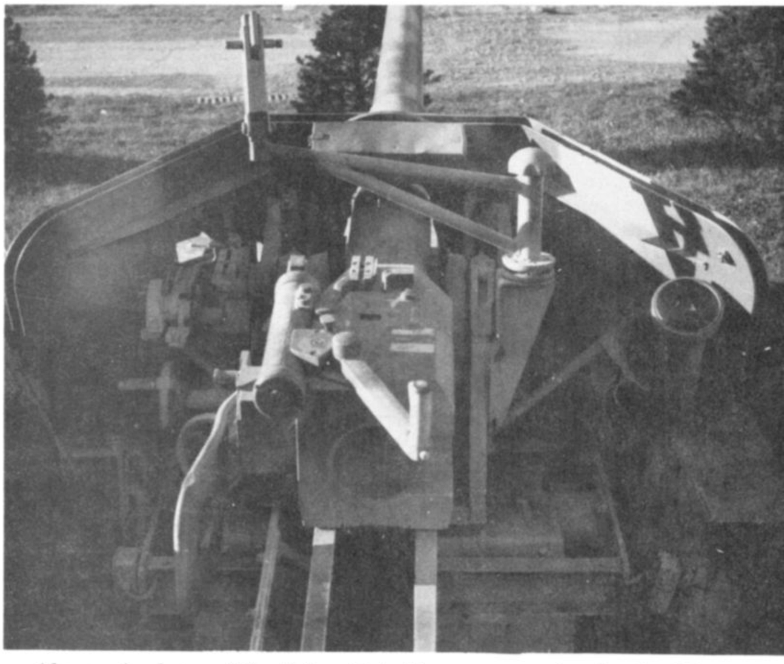
In mounting the heavy *7.5cm Pak 40* on the armored car, a number of structural changes had to be made to the basic *Sd. Kfz. 234* hull. The upper hull area was opened-up for greater accessibilty in mounting the gun; while this greatly decreased overhead protection for the crew, it was necessary as the *7.5cm* weapon was large and bulky, and the gun crew also needed standing room. The armored car upper hull sides were modified, both in an effort to provide better crew access and to simplify the mounting of new single-piece side armor for better crew protection. The complete weapon, less trails and wheels, was mounted in the center of the fighting compartment on a transverse beam arrangement; this mounting arrangement can be clearly seen in the photos to the right. The original gun mount was modified with traverse stops to prevent over-traverse to the sides. While this limited effective tracking of moving targets, it was necessary to keep the heavy recoil of the gun directed rearward instead of to the sides. The *7.5cm* gun was complete with its original spaced-armor gun shield. A pedestal was mounted on the right side of the anti-tank gun; this pedestal provided an anti-aircraft mount for a light machine gun which was manned by the loader. Due to the limited amount of space at the rear of the abbreviated fighting compartment, there was no crew station to drive the vehicle in a reverse direction. The four-man crew consisted of the normal gun crew (Commander, Gunner and Loader) and the vehicle driver. The vehicular radio was manned by the loader (when he was not involved with other duties). Due to the limited amount of space in the vehicle, ammunition stowage was sharply curtailed; a large rectangular box fastened to the right fender served to hold approximately 20 rounds, with the remainder of the basic load being transported by unit re-supply vehicles.

The *Sd. Kfz. 234/4* was a powerfully-armed and highly mobile vehicle. Unfortunately for the Germans, the vehicle entered service too late and in too few numbers to have any great effect on the fighting on the *Ostfront*. In attempting to document exactly how these vehicles were used, we have determined that these vehicles were still considered primarily as 'armored cars', being assigned to the 1945 period *'gemischtes-Panzerspäh-Kompanie* (*f.G.*) (*KStN 1162f* [*f.G.*])', which was a component part of the 1945 Armored Reconnaissance Battalion. If readers are interested, details of this unit can can be provided in an organization chart article.

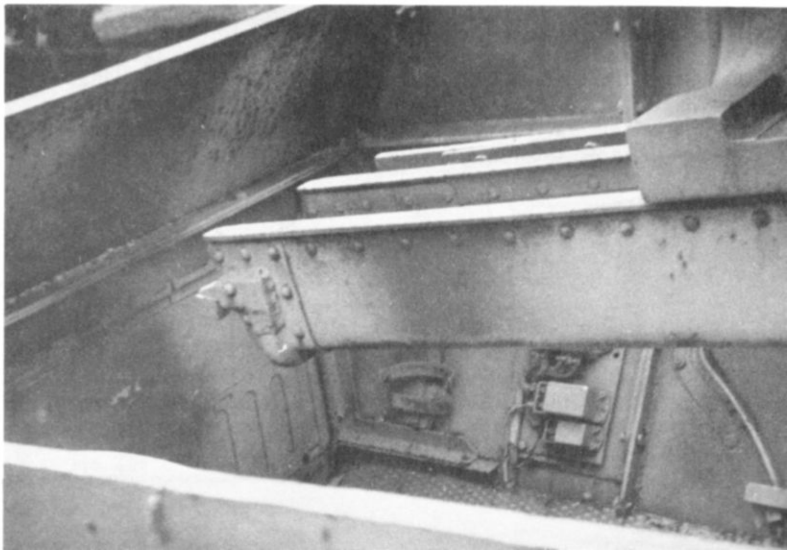
The drawings on the following pages illustrate the two versions of the *Sd. Kfz. 234* covered in this article. The drawings of the *Sd. Kfz. 234/3* are done as partial drawings only, in an effort to save space. These drawings show the weapon mountings and the fighting compartment. As the hull of this vehicle was identical to the earlier *Sd. Kfz. 234/1*, readers should utilize the complete vehicle drawings of the latter vehicle which appeared in Volume 5, Number 1. As the *Sd. Kfz. 234/4* was substantially different from other vehicles in this series, the entire vehicle is shown in the form of four-view drawings. Readers are advised to compare the drawings in this issue with the preceding ones to obtain a better idea of the details of the German conversion.



Above: This angled-rear photo of the Patton Museum vehicle shows some of the modifications carried out to the original Sd. Kfz. 234 *armored car.*



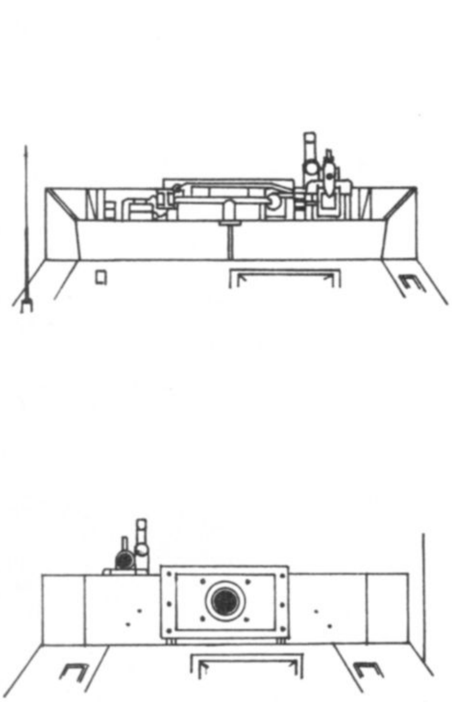
Above: A photo of the 7.5cm Pak 40 *gun mounting in the* Sd. Kfz. 234/4. *The pivoting machine gun mounting can be clearly seen, as well as the method of mounting the weapon into the vehicle. Note the spaced-armor gun shield.*

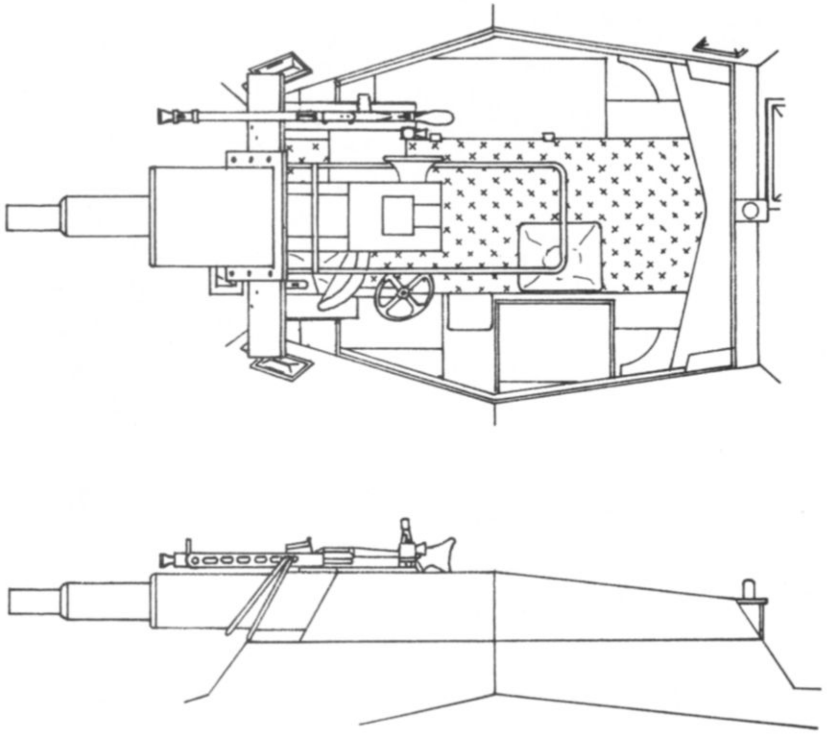


Right: This photo shows the rear of the Sd. Kfz. 234/4 *fighting compartment. Note the bulkhead separating the engine compartment and the rear of the gun slide which effectively divides the compartment in half.*

GERMAN HEAVY ARMORED CARS

Sd. Kfz. 234/3 & Sd. Kfz. 234/4

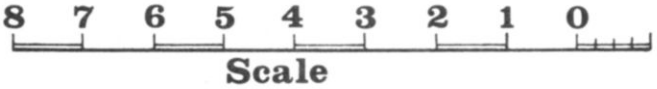




Drawn by S. R. Cobb

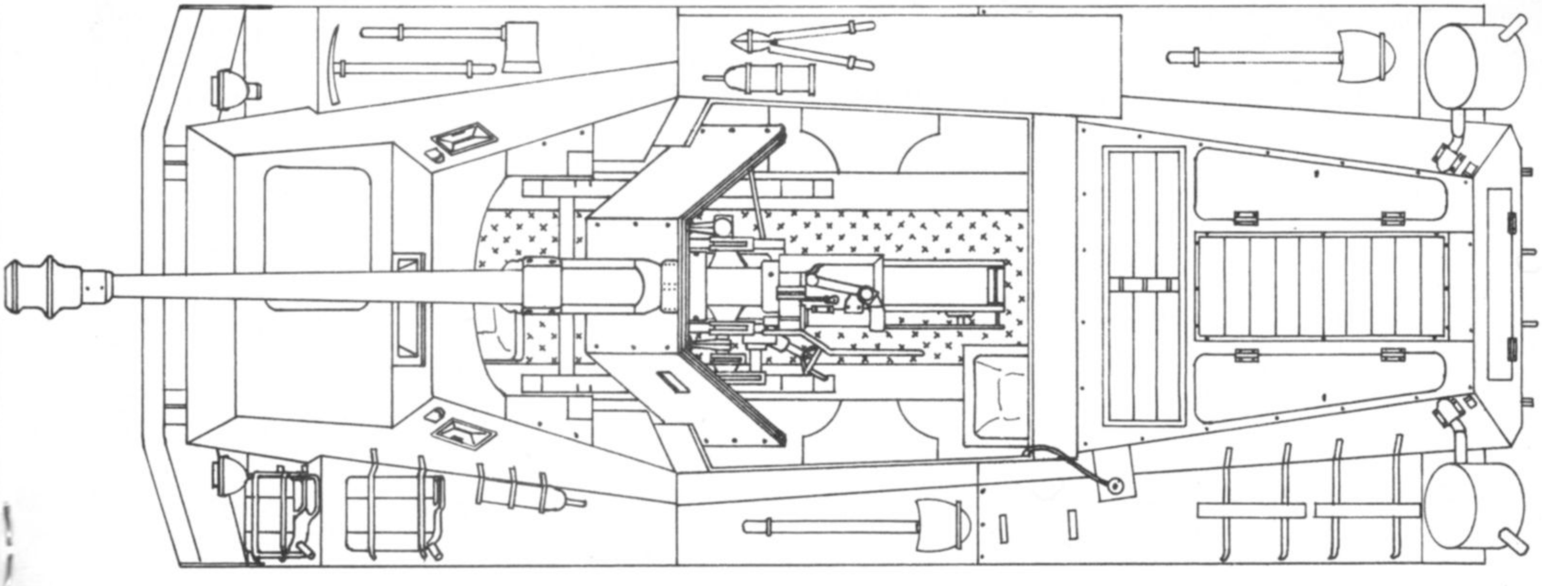
Magazine Purchasers may have photocopies of these drawings made locally as an aid to their personal or commercial modelmaking, but purchasers do not have the right to distribute copies of these drawings to others.

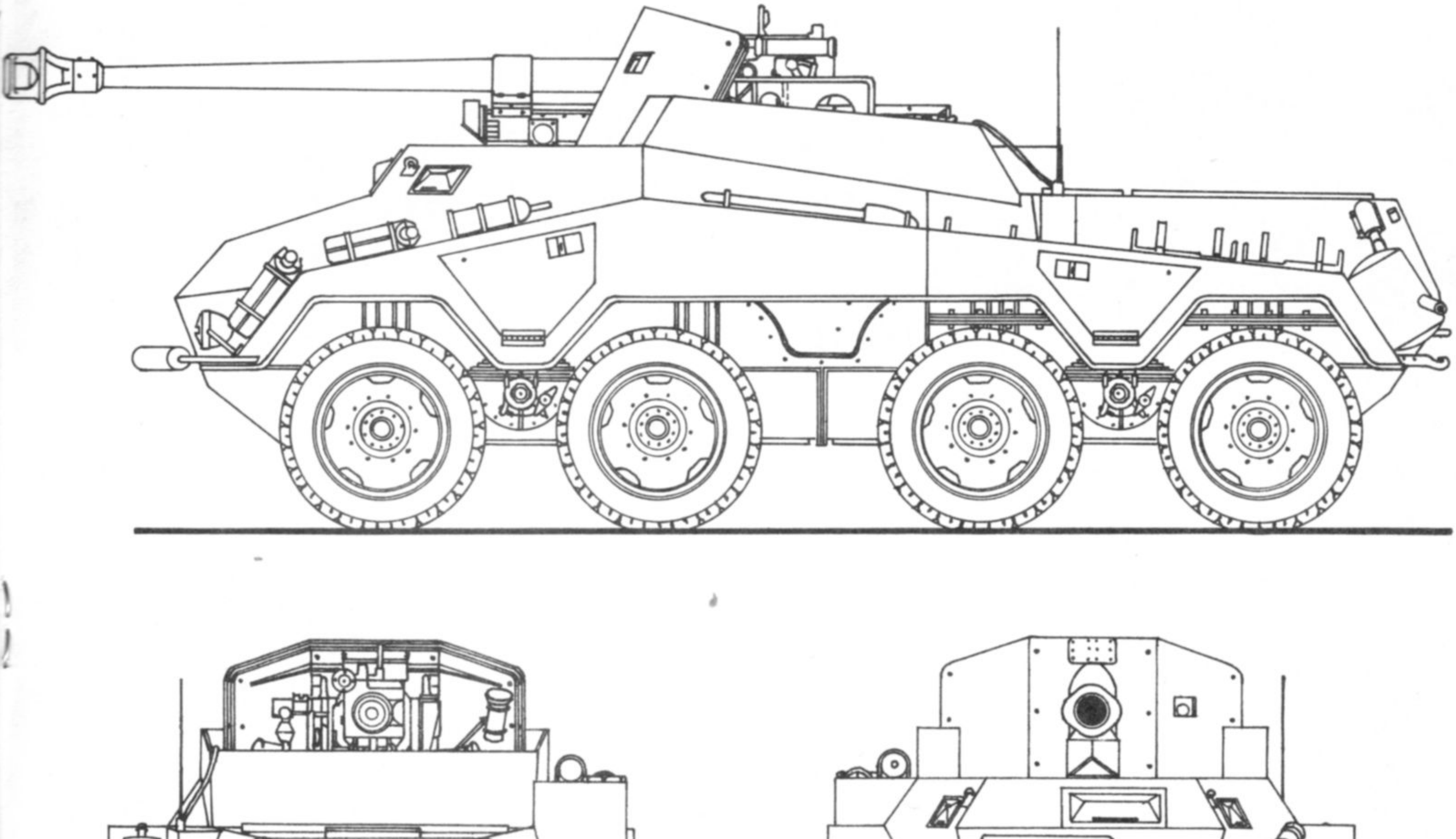
Ratio of this drawing to the original vehicles is 1:32.
To obtain 1:35th scale drawings, photo-reduce to 92% of the original size.

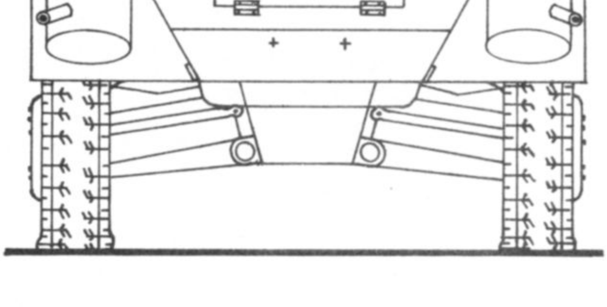


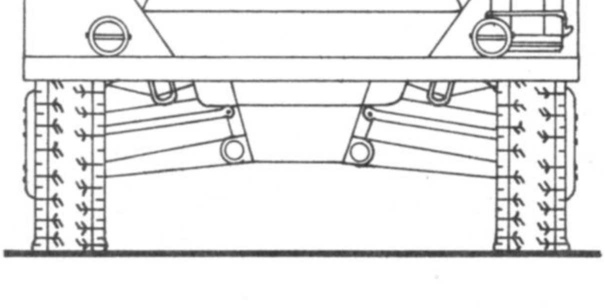
Above, Left: Four-view partial drawings of the fighting compartment and armament of the *Sd. Kfz. 234/3*. These drawings should be superimposed over hull drawings of the *Sd. Kfz. 234/1*, which were presented in Volume 5, Number 1 of *AFV-G2*, in order to present a total picture of the *Sd. Kfz. 234/3* armored car.

Above, Right: Four-view drawings of the *Sd. Kfz. 234/4* heavy armored car, mounting the *7.5cm Pak 40* anti-tank gun. These drawings should be compared with basic drawings of the *Sd. Kfz. 234/1* in order to illustrate the various hull changes which were undertaken in manufacturing this vehicle.





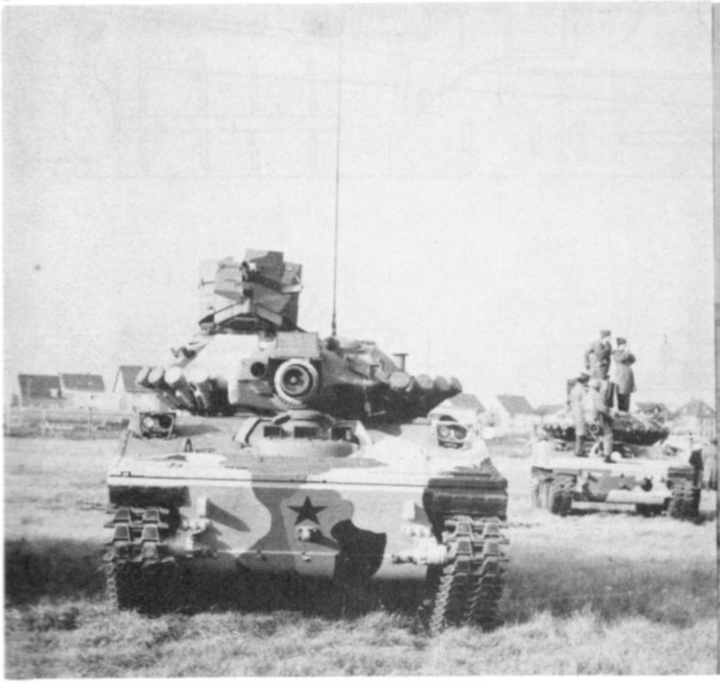


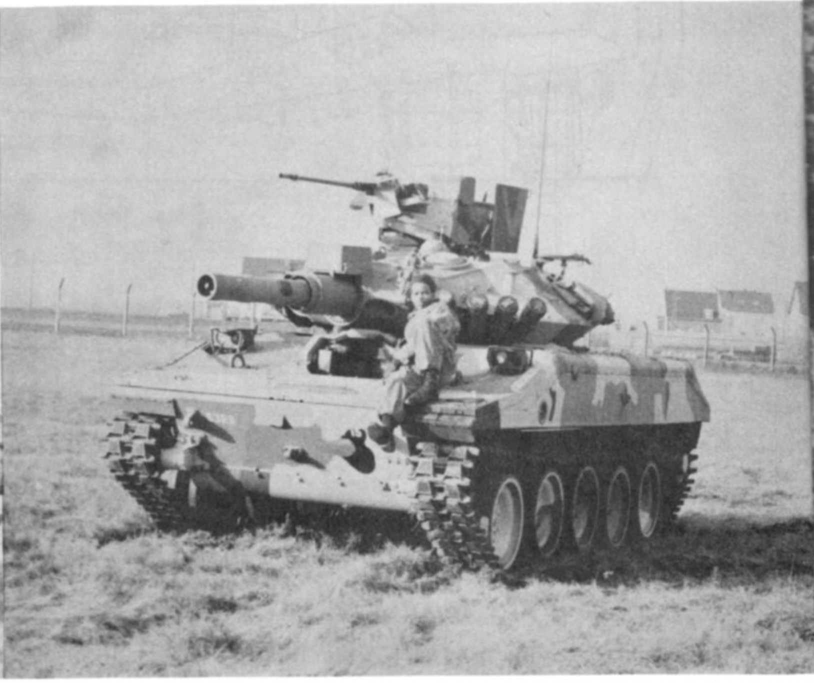


ARMOR IN PICTURES

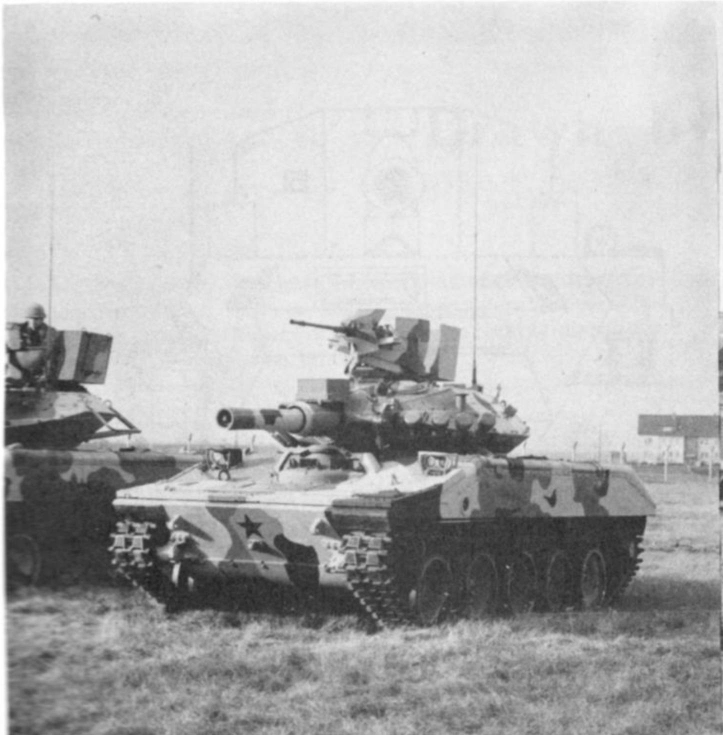
'Armor in Pictures' is a photographic article series to display reader-submitted material on military vehicles and associated models or dioramas. Readers are invited to submit their photographs of vehicles or models for inclusion in this series. Photos should be packed securely, preferably between sheets of cardboard to prevent folding and/or damage, and sent to *AFV-G2*, P. O. Box 820, La Puente, CA 91747, Atten: *'Armor in Pictures'*. Credit will be given in the photo caption for all photos published and all photos will be returned after publication, along with a copy of the magazine in which the pictures appear.

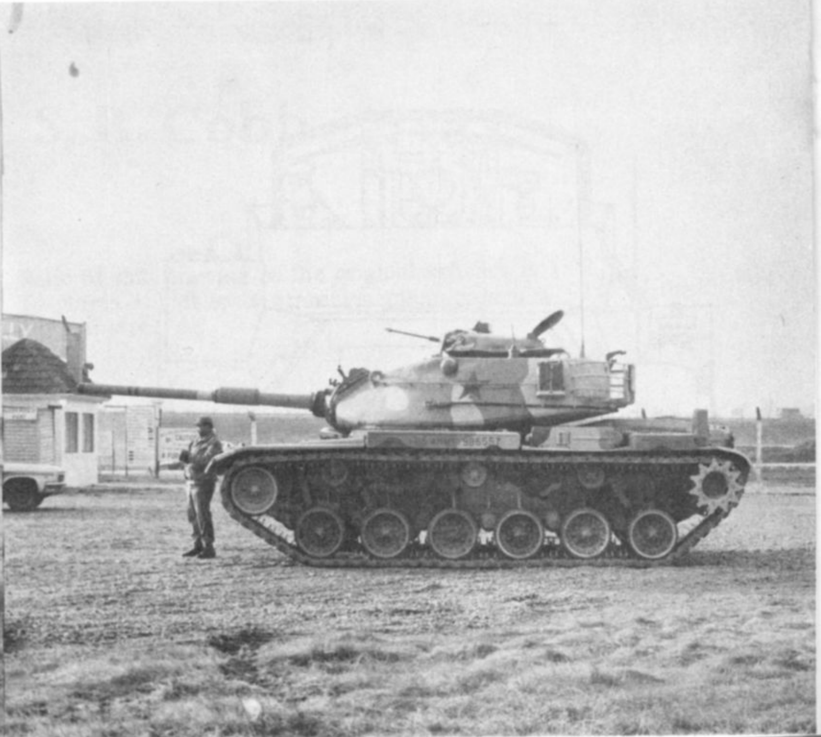
'Armor in Pictures' is also designed to serve readers as a forum for photo requests. If there's a particular photo reference needed, for modeling, for data, for accurate markings, etc., drop *AFV-G2* a note (at the above address) to let the staff know what is required. Our staff will attempt to provide the photos that the readers wish to see, and we'll also provide a list of requested photos that readers are searching for....

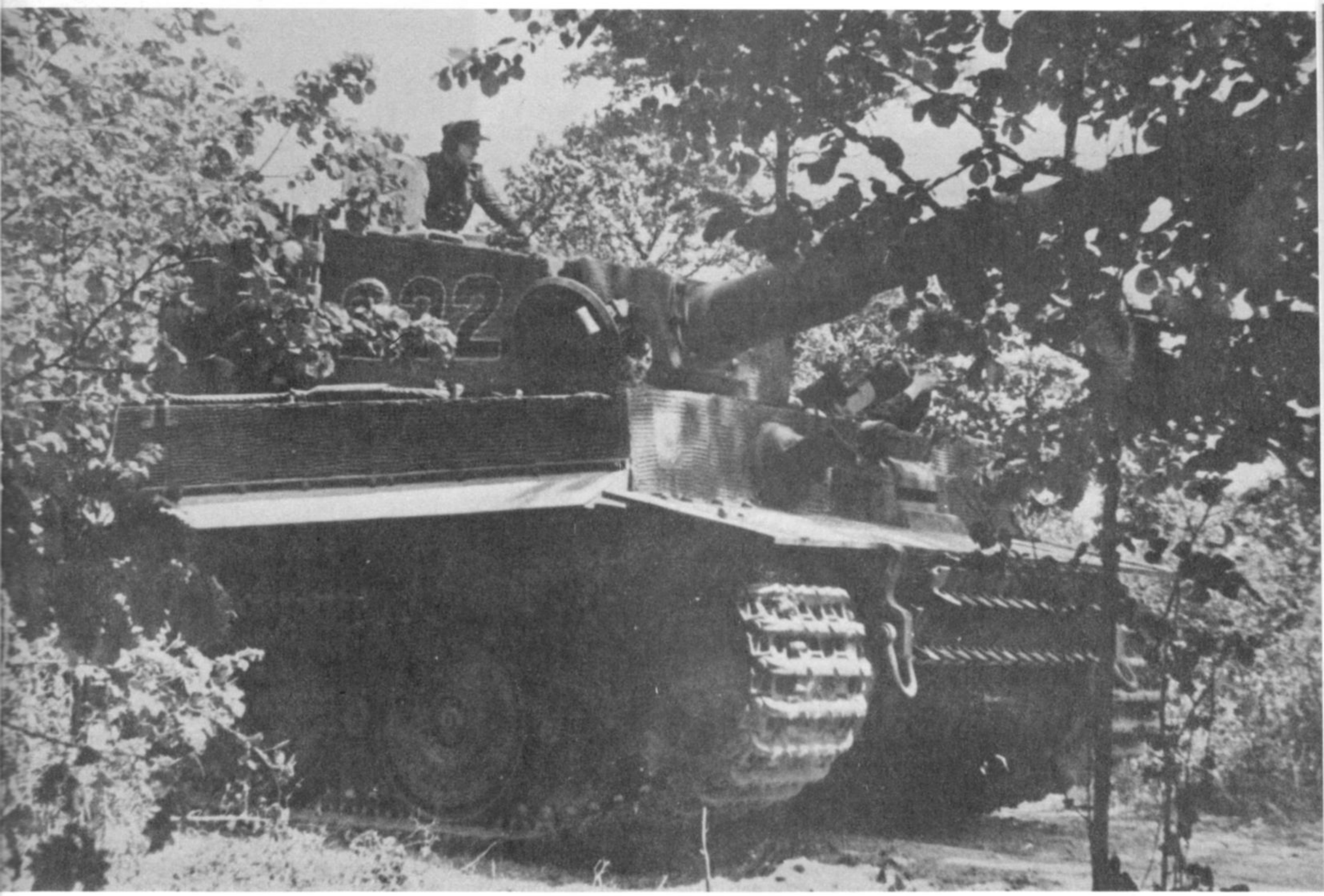




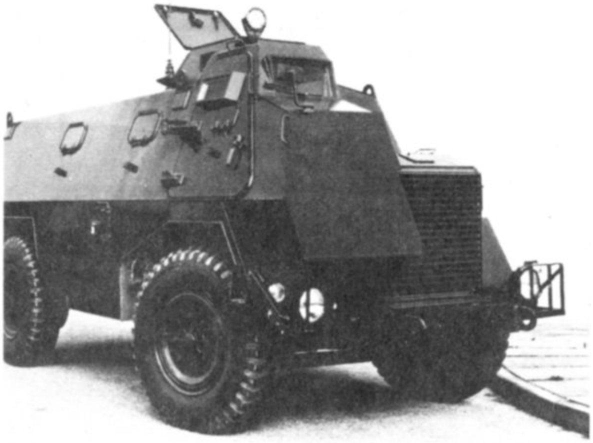
The photos on this page were taken by Michael J. Barclay of Fort Campbell, KY. They were taken in the Fall of 1973 and show vehicles of a U.S. Army Armored Cavalry Troop at Coleman Barracks (between Heidelberg and Mannheim), West Germany. The photos are crisp and clear and show newly painted M551's and an M60A1 in the European four-color scheme of sand, dark green, reddish brown and black. (This scheme and colors were illustrated in *AFV-G2*, Volume 4, Number 12.) Notice that all stars on the vehicles are in black, as are 'U.S.A. Numbers'. Mr. Barclay took these photos while on a JROTC tour and he comments that this scheme was still in effect when he left Europe in June of 1974. These photos should prove helpful in modeling this scheme.

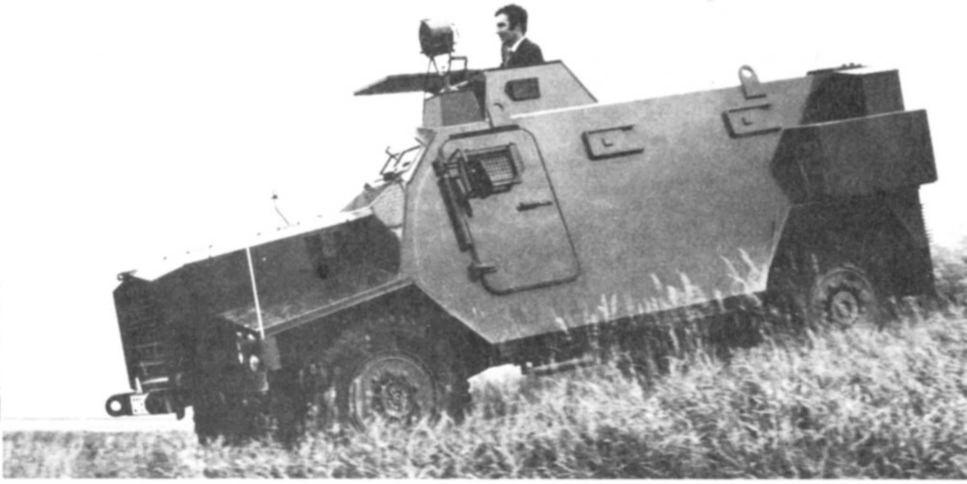






The most interesting photo above was provided by Kenneth A. Nieman of Brookfield, Wisconsin. Mr. Nieman has the original photo in his collection and he indicates that the photo is dated May 20th, 1944, taken on the Canal Coast in Northern France. The *Tiger I.* heavy tank is clearly from the *2. Kompanie* of *schwere-SS-Panzer-Abteilung 501*, and Mr. Nieman notes the likeness of the hull radio operator to Balthasar Woll, Michael Wittman's gunner. Could this possibly be Woll? Note the application of *Zimmeritt* and the broad-style turret numbers, which appear to be red with white borders.





The photos above provide an extra view of the GKN Sankey *AT-104* Armored Personnel Carrier (photo on right) and its predecessor vehicle, the *AT-100* (photo on left). These pictures were provided by Dave Haugh, whose letter appears in this issue's *Muzzle Blast* column (on page 4). Note the differences in forward cab profile between the *AT-100* and *AT-104*. The *AT-104* photo nicely illustrates the forward-opening 'command' hatch on the *AT-104* as well as the external spotlight mounts. The original *AT-100* did not have four-wheel drive and was slightly smaller than the *AT-104*. Both vehicles, of course utilized Bedford truck running gear components. The *AT-104* weighs substantially more than the *AT-100* (8074 kg versus 7030 kg). Other differences can be clearly seen in the photos.

COLOR 'N CAMOUFLAGE:

Modern U.S. Army 4-Color Camouflage

by Gary Binder

This issue's *Color 'n Camouflage* article continues the article in the last issue which began coverage of the U.S. Army's multi-color camouflage system. The drawings on this and the next two pages illustrate the multi-color patterns as they apply to the U.S. Army's M-60A2 Medium Tank, which is now going into service with U.S. forces in Europe. The drawings on this and the opposite page show the hull patterns; these same hull patterns are also to be used on M-60 and M-60A1 Medium Tanks. The drawings on page 28 show details of the camouflage pattern on the M-60A2 turret. Readers should note that these illustrations are not drawn to any particular scale (they are instead drawn to fit on a page); please refer to the appropriate bar scale with each set of drawings. The drawings were redrawn from those in the official reference which is titled: 'Camouflage Pattern Painting - Design Drawings, Appendix 1A and Appendix 1B'. This reference was published in June of 1973 by the Countersurveillance and Topographic Division, Military Technology Department, U.S. Army Mobility Equipment Research and Development Center, Fort Belvoir, Virginia. In future parts of this article, we shall draw further on this reference to illustrate camouflage patterns on other U.S. Army vehicles.

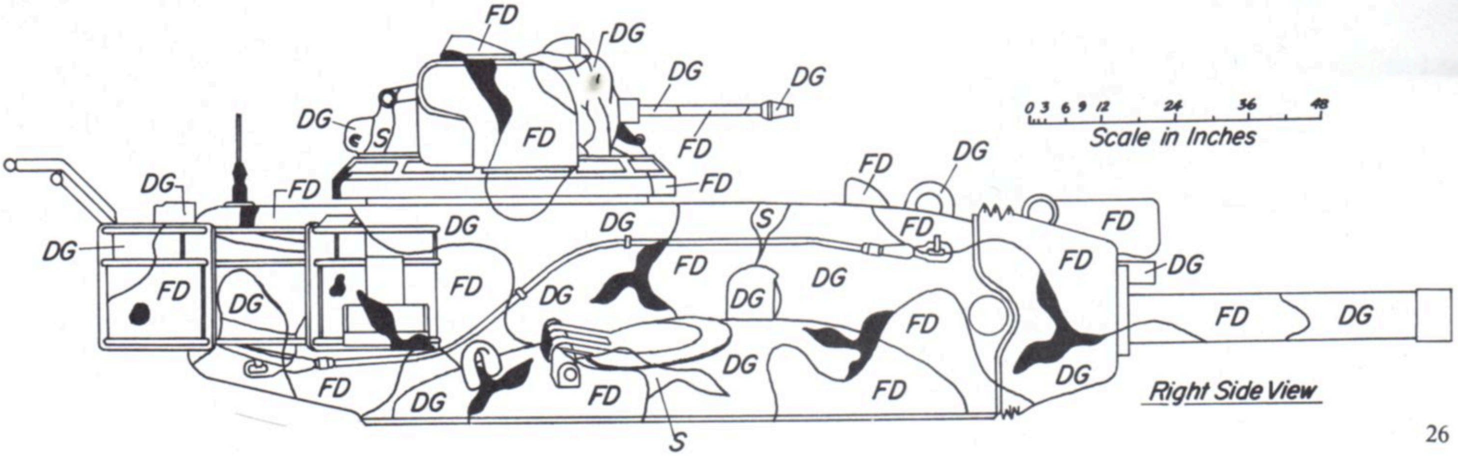
A close look at the drawings in this article will reveal an important different from those drawings in the last issue. Whereas the previous drawings utilized numbers to designate the appropriate colors for the pattern, the drawings in the Fort Belvoir reference (quoted above) designate colors by a series of letters. Whereas the previous illustrations were designed to apply for a variety of camouflage schemes (which were dependent upon climate and zone of action), the current camouflage patterns use a system of colors which do not agree with the climatic system which we quoted in the last issue. In the new 'system', which is shown here, the letters designate colors as follows:

DG = Dark Green
S = Sand
FD = Field Drab
B = Black

Field Drab and *Sand* color paint chips were provided in the previous issue, and the paint chip below illustrates *Dark Green*.

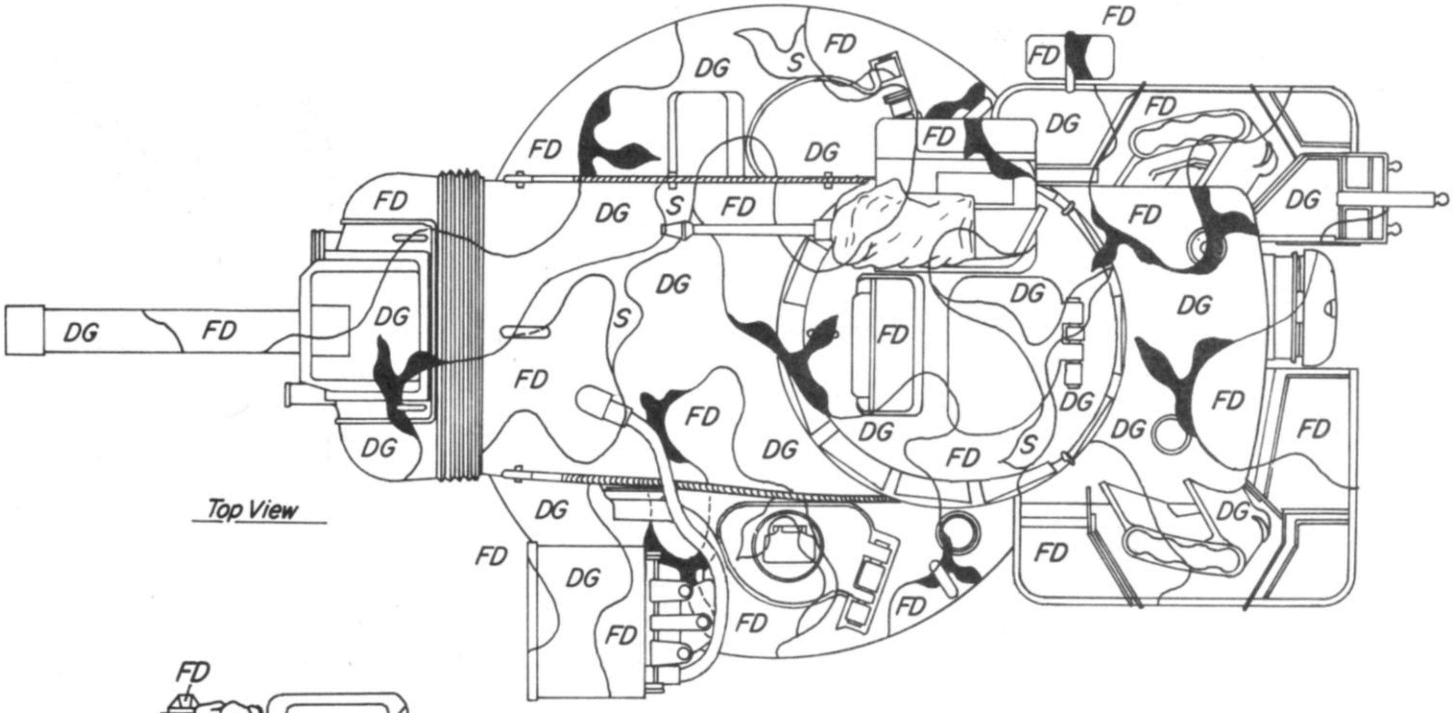
DARK GREEN 34102

20 pts	Floquil RR48 Coach Green
3 pts	Floquil RR30 Reefer Orange
2 pts	Floquil RR31 Reefer Yellow
1 pt	Floquil RR83 Mud
1 pt	Floquil RR10 Engine Black

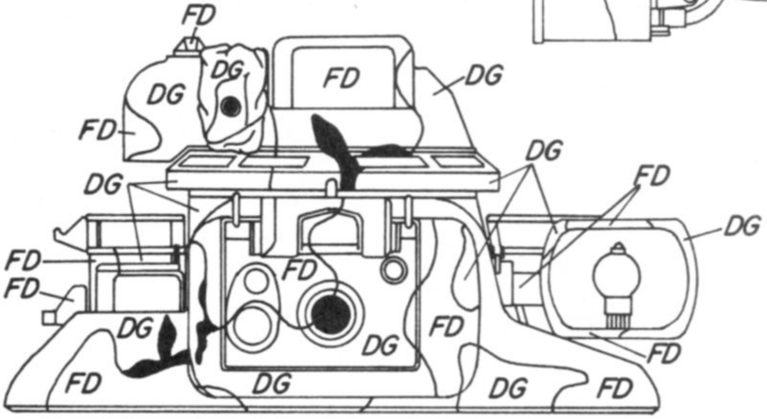


5 VIEW PATTERN DRAWINGS:

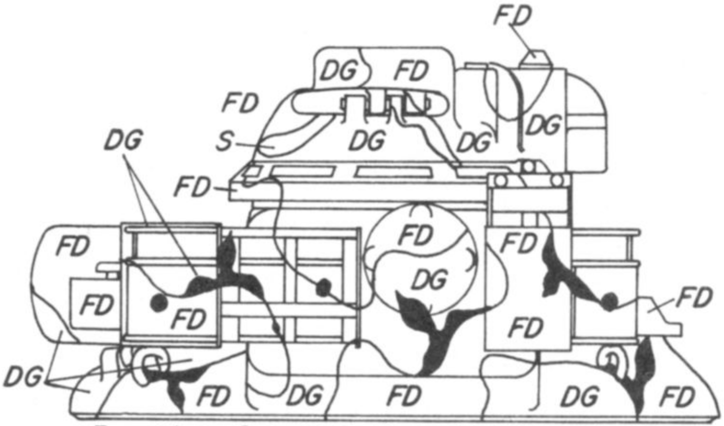
M60A2 TURRET



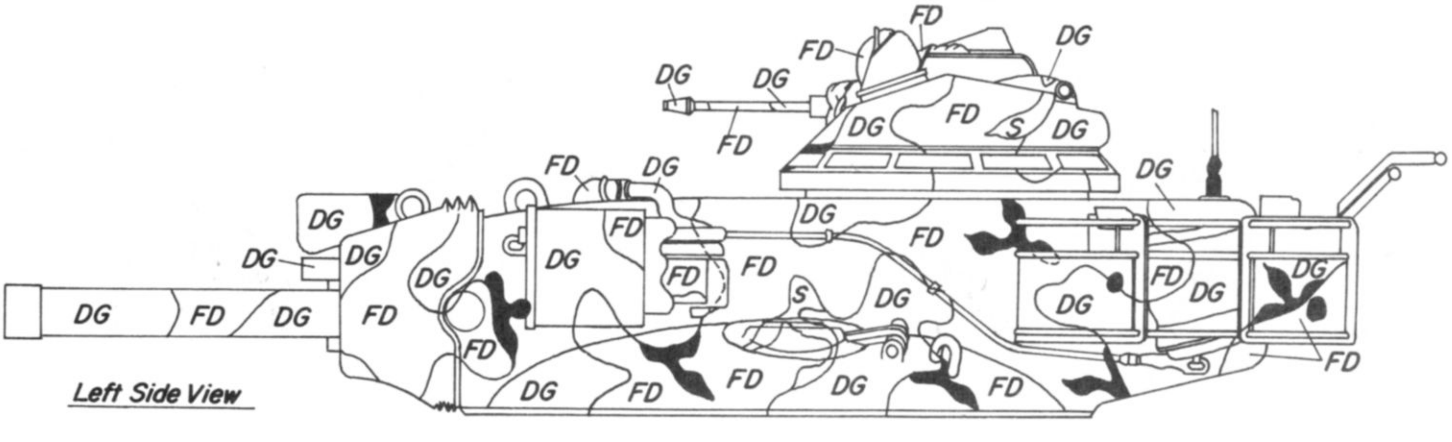
Top View



Front View - See side and top views for all but front-facing vertical surfaces.

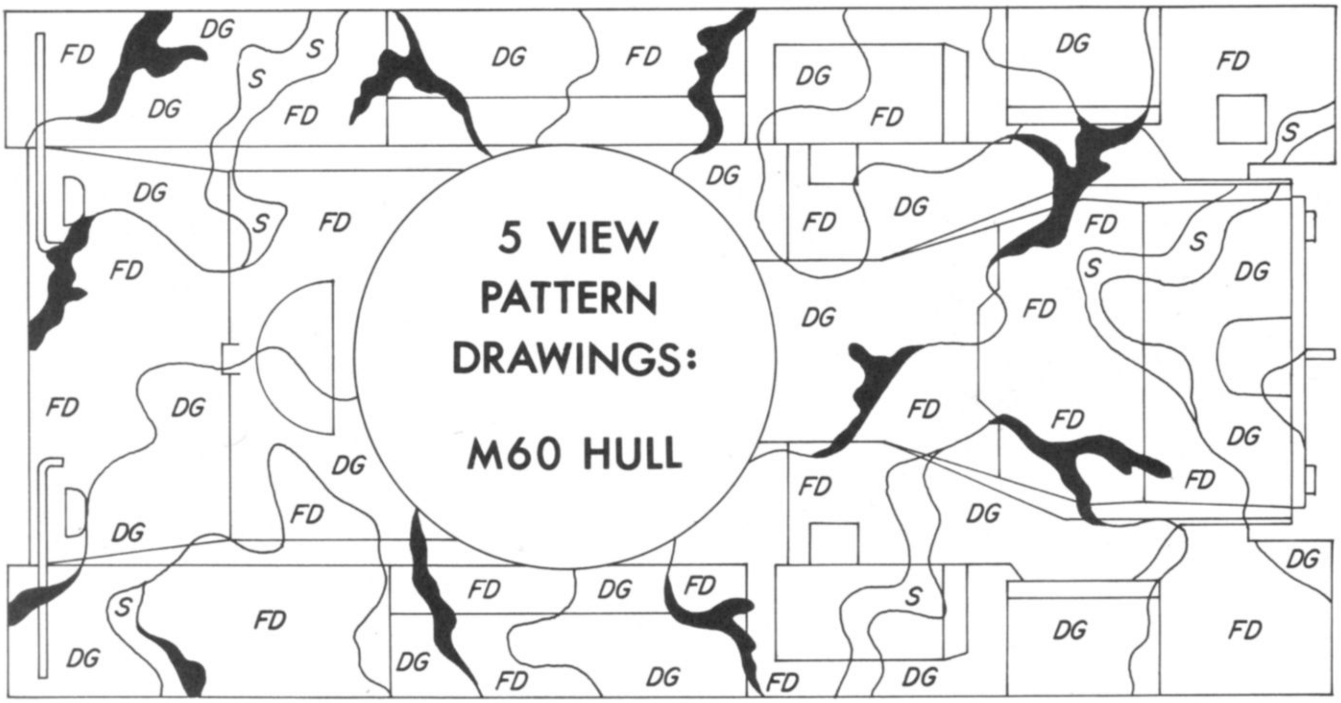


Rear View - See side and top views for all but rear-facing vertical surfaces.

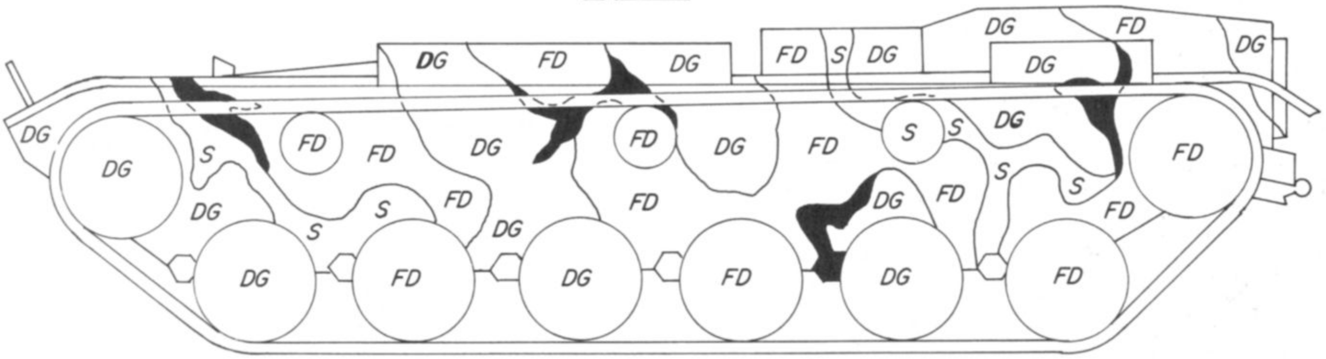


Left Side View

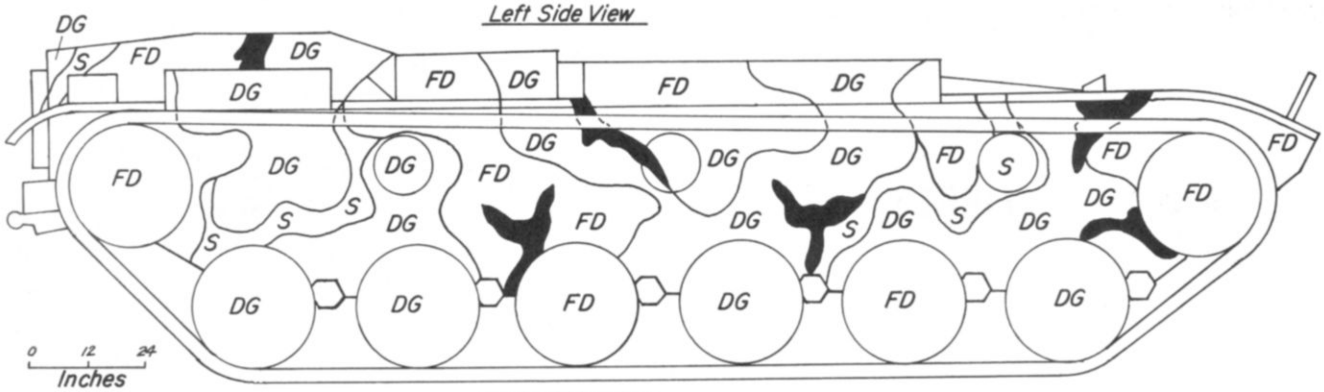
5 VIEW PATTERN DRAWINGS: M60 HULL



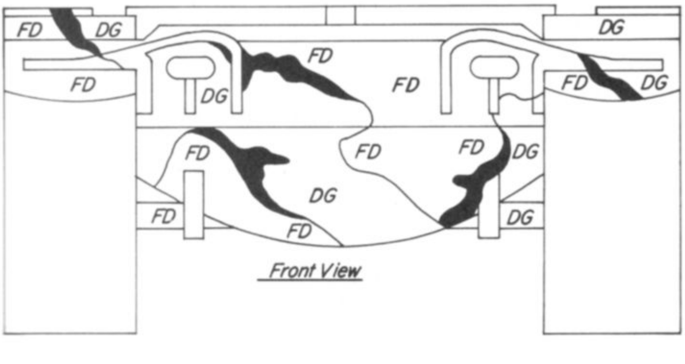
Top View



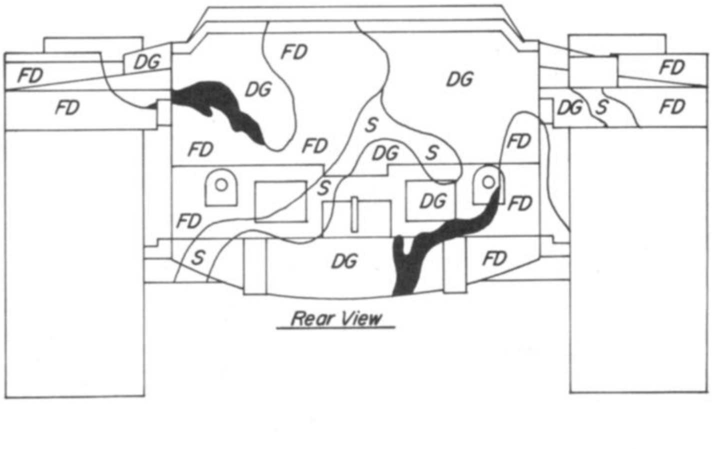
Left Side View



Right Side View



Front View



Rear View

Book Review: *The Great Tanks*, by Chris Ellis and Peter Chamberlain (Hamlyn Publishing Group, Ltd., London, England, 1975)

Reviewed by James Steuard

This is a large and expensively printed book which must be appreciated for its photo content, if for no other reason. As its title suggests, the book deals with the history of that armored vehicle commonly called a 'tank'. Starting with the initial efforts in World War I., the book traces the history of tanks through the principal countries to use them. Chapters cover the Renault Tank, the Small Tanks, Christie Tanks, the Russian T-34, etc. In general, the chapters are short and are supported by between 10 and 20 black-and-white photos. Liberally sprinkled throughout the book are full-color pages devoted to tanks; these include color art renderings (taken from various Profile publications on armored vehicles), color cut-away drawings (taken from works by John Batchelor), and numerous color photographs. These latter photos span the complete history of the tanks, ranging from a British Mark V. Male to an Israeli T-62 in post-1973 markings.

The text portion of the book is altogether too brief and sheds little light on new subjects. The reviewer definitely got the impression in reading the book that much of the text has been rehashed in a hurry from other books in an effort to 'grind out another armor book'. While generally accurate, there are a number of quite puzzling inconsistancies that creep into the story. For example, on pages 84-85, the authors go into great length (for this book) to describe a German *Sturmtiger*, both externally and internally; this vehicle was, of course, a rather esoteric vehicle of which only *ten* examples were ever constructed. While these vehicles saw limited combat, they were undoubtedly still considered experimental in nature. The inconsistancy comes on page 99, when the author completely ignores the infra-red equipped German *Panther* tanks with the comment that, *'A number of Panthers were actually fitted experimentally with infra-red sights...'*. In reality, with well over 100 *Panthers* converted to this role, the conversion was far from experimental, and the details of this conversion should have been presented in at least the same fashion as coverage of the *Sturmtiger*. The worst of the situation is that this 'renowned' author team should have known better than this!

The obviously strong part of this book is in its photo content. While a number of the black-and-white photos are *'ho-hum'* in nature (having been seen in many elsewheres), the really strong feature is the color pictures. Virtually none of these are common, and a special notice must be given of the excellent quality photos of Israeli vehicles. This is obviously the attraction of this book, and if you're interested in having a good collection of color armor photos, this book is a must for your library. It is well worth buying for the photo content.

Book Review: *Tanks and Other Armoured Fighting Vehicles, 1942-1945*, by B. T. White (Blandford Press, London, England, 1975)

Reviewed by Robert J. Icks

Tanks and Other Armoured Fighting Vehicles, 1942-45 is the latest volume in the Blandford Press (England) series on mechanized warfare in color, supplementing this author's earlier *Tanks and Other Armoured Fighting Vehicles, 1900-1918* and *Tanks and Other Armoured Fighting Vehicles, 1939-1941*. Mr. White's book not only shows the thorough research of the author but also compresses into small space accurate pictures of 138 vehicles in color as well as line drawings showing cross sections of Henry Hopkins, Cromwell VIII., Comet, Churchill III., Tiger I., T-34/85, *Chi-nu* and M-5 Light. The illustrations are by John W. Wood, B. Hiley, J. Pelling and E. Bruce. The format includes an Appendix which covers camouflage and markings by country and also a table of full-tracked armored vehicle data for 52 basic vehicles of the major countries. There probably are those who prefer photographs to color renditions but these are accurate, realistic and meaningful.

There is always something to be learned from these attractive books. The English were the first to give names to armored vehicles, some of which, like the Sherman and Stuart, have been adopted internationally. Mr. White has added one that was new to me -- that of 'Scott', the M-8 Howitzer Motor Carriage. He also clarified for me the details of the Dodge and Ford armored vehicle improvised by the Free French in Libya.

I found but one error. It is doubtful if there are more than that...

Book Review: *Conflict Special Study #1, Arab-Israeli Armor 1973*, by T. P. Schwieder (Simulations Design Corp., P. O. Box 19096, San Diego, CA 92119, 1975, $2.50)

Reviewed by Duane Thomas

This 32-page, saddle-stitched booklet attempts to analize the armor of the 1973 *Yom Kippur* War through comparative techniques. Each of the tanks of that conflict are covered in a relatively short chapter which includes 1:64th scale drawings (done by Dave Haugh) and numerous photos. Contents cover the Soviet T-54/T-55/T-62 (with drawings of the T-55 and T-62), the American M-48/M-60 (with drawings of the M-48 and an M-60A1 mislabeled as an M-60), and the British Centurion Mk.5 (Modified). The booklet concludes with a large comparative data table, a comparative ammunition chart, a vehicular loss table, and a glossary of armor-related terms.

Most of the textual information in this booklet covering Arab-Israeli armor is interesting. A good deal is presented on the Soviet vehicles which is accurate and myth dispelling. Unfortunately, the coverage of the M-48 and M-60 is limited to approximately one page, and in terms of quality, falls far behind the coverage of the T-54 family. Some of the text deals with the now-famous Senator Eagleton comment about hydraulic fluid flamability (said quote has been found by armor historians to be political hogwash), but nothing has been done to show changes between the M48 (with its stereoptic rangefinder. for example) and the M-60. There are some rather pendantic statements, such as... *'the M-48/M-60 cannot accurately shoot as far as it can sight...'*. About all that these comments indicate is an unfamiliarity with tanks. Coverage of the British Centurion, like that of the Patton, is altogether too brief, and a number of statements need serious rechecking. For example, the slightly higher sustained rate of fire of the

Continued on Page 40

The German Light Radio-Control Tank Company

In Volume 3, Number 5 of *AFV-G2*, the regular organization chart article illustrated a *Panzer-Funklenk-Kompanie*. This article covered the early-type radio-controlled tank unit, which was equipped with *Tiger I.* heavy tanks and Borgward *B-IV.* demolition vehicles. In addition to an explanation of this type of unit, the article presented as complete a listing as could be determined of *Panzer-Funklenk* units. In the period of time since publication of this article, research has continued on this subject field, in an effort to better document and record the history and evolution of German radio-controlled tank units.

The chart on the opposite page illustrates the organization of a *leichte-Panzer-Kompanie Typ 'F'*, which was organized under *KStN 1171f*. Like the organization illustrated previously, this company-level unit had remote controlled Borgward *B-IV.* demolition vehicles, more correctly identified by the designation *Sd. Kfz. 301*, but it differed in that its armored equipment consisted of *Sturmgeschütz III.* assault guns. This company had ten of the assault guns and eighteen of the Borgward *Sd. Kfz. 301* vehicles. As can be seen in the chart opposite, the company was organized with two platoons, each containing four assault guns and nine demolition vehicles. It appears that this 'Light' Tank Company was formed for two reasons: first, due to a lack of heavy *Tiger* tanks, which were being assigned instead to heavy Tank Battalions which had a higher priority for equipment, and secondly, due to the changing nature of the war into a more defensive conflict for the Germans. Whereas the heavy *Tiger* tanks were a powerful offensive weapon, the smaller organization utilizing the *Sturmgeschütz III.* was better organized and equipped as a defensive unit. The *leichte-Panzer-Kompanie Typ 'F'* was organized under the 1944 *'frei Gliederung'* concept, and thus lacked organizational maintenance, mess, supply and administrative personnel, which were instead assigned to the battalion-level *Versorgungs-Kompanie*, or to the unit being supported by the *Panzer-Kompanie*.

Further research into this type of unit has revealed the method of employment used for the demolition vehicles. These *Sd. Kfz. 301*'s were driven forward by their driver-mechanics, who positioned their vehicles as close to the chosen target as cover and enemy observation permitted. Unless an urgent mission so dictated, the drivers were not to take their demolition-carrying vehicles into an area swept by enemy fire; this was far too dangerous and often resulted in the loss of the vehicle and driver. Instead, the drivers were picked up by their section headquarters vehicle. In the chart opposite, a *Sd. Kfz. 251/1* armored halftrack was assigned for this recovery-pickup purpose. Of course, this larger halftrack vehicle served as baggage carrier and living quarters for the drivers; it also carried spare parts and a radio mechanic who assisted in keeping the demolition vehicles serviceable. When the time came for deployment of the *Sd. Kfz. 301*'s, they were moved forward under radio control. In a few cases, this radio control eminated from the *Sd. Kfz. 251/1* halftrack, utilizing a backpack radio-control transmitter. This small set lacked range and power, and it was usually preferable for the assault guns to assume radio control. Each of the platoon's four assault guns was fitted with an extra radio-transmitter for control purposes. In combat, the assault gun loader-radio operator controlled the motion of the *B-IV.* while the assault gun commander corrdinated the deployment and the supporting fire of the assault gun. Once the Borgward vehicle reached the target area, remote control dropped the explosive warhead, withdrew the non-expendable carrier, and then detonated the explosive package when safe. It appears that remote control by the assault guns was preferable not only from the standpoint of longer-range radios; these vehicles had greater armor and weapons and were better suited to a combat environment.

In writing the original article in Vol. 3, No. 5, we listed the *Panzer-Funklenk* units, relying on a 1945 German Order-of-Battle publication which was published by the U.S. Army. Since then, a good deal of information has been found on the battalion-sized units; however, we are still looking for assignments and unit histories of the separate *Panzer-Funklenk-Kompanien*. While it appears that our initial comments on these separate companies were generally accurate, additional information is still being sought. Can any reader help?

Panzer-Funklenk-Abteilung 300. was formed in September 1940 with two companies as a Minefield clearing unit. In February 1942, the battalion was reorganized as a *Funklenk* unit and a *3. Kompanie* was added. During 1942, this battalion saw service in Southern Russia under *1. Panzer-Armee*. In September of 1942, the battalion was dissolved and personnel used to form *Pz. Abt. 301 (Fkl.)*. Two months later, *Panzer-Ersatz-Abteilung* (Tank Replacement Battalion) *300.* was formed in Neureppin, Germany (*Wehrkreis III.*); this unit initially consisted of two companies, but in December 1942, the battalion was converted into a straight *Funklenk* replacement role with four companies (*1. Kompanie = Panzer-Versuchs und Lehrkompanie*; *2.* and *3. Kompanien = leichte-Panzer-Ausbildungs-Kompanien* [Light Tank Training Companies]; and *4. Kompanie = Ersatz* [Replacement] *Kompanie*). This unit now became the official training and replacement unit for *all* German *Funklenk* formations. In March 1943, the battalion was redesignated as *Panzer-Versuchs und Ersatz-Abteilung 300. (Funklenk)*. Shortly thereafter, it moved to Eisenach, Germany.

Panzer-Funklenk-Abteilung 301. was formed in Southern Russia on 9 September 1942, from the personnel of *Pz. Abt. 300 (Fkl.)*. Initially, the battalion had three companies; in November 1942, the *2. Kompanie* was transferred to *Pz. Abt. 302 (Fkl.)* as its *3. Kompanie*; the *2. Kompanie* was reformed from other battalion personnel. In January 1943, this new *2. Kompanie* became the separate (and independent) *Panzer-Funklenk-Kompanie 311.*, and the battalion was again brought up to full strength, this time by the merging of *Pz. Abt. 302 (Fkl.)*; this resulted in a four-company battalion. In January 1945, the *4. Kompanie* was transferred to *Pz. Abt. 303 (Fkl.)*. The battalion was assigned as *Heerestruppen*, fighting in 1942 near Leningrad under *11. Armee*. At the close of the year, the battalion was again in Southern Russia, fighting south of Stalingrad and in the Don River marshes under *1. Panzer-Armee*. In 1944, the battalion fought at Zloczow, and in November went through re-training and re-equipment at Regensburg. In December came the Ardennes offensive, and the battalion fought in this operation, attached to *116.* and *9. Panzer-Divisionen*. In 1945, following the end of the Ardennes fighting, the battalion served under *15. Armee* until war's end.

Panzer-Funklenk-Abteilung 302. was formed in October 1942 in Neureppin, from the personnel of the disbanded *III. Abteilung, Panzer-Regiment 10.* (*9. Kompanie* = new *1. Kompanie*; *10. Kompanie* = new *2. Kompanie*) and the *2. Kompanie, Pz. Abt. 301 (Fkl.)*. In January 1943, the battalion was disbanded, and the *Stab*, *1.* and *2. Kompanien* were merged into *Pz. Abt. 301 (Fkl.)*. The *3. Kompanie* was used to form the independent *Panzer-Funklenk-Kompanie 312.*

In July of 1944, a new *Panzer-Funklenk-Abteilung 302.* was formed in France under authority of the *Oberbefehlshaber West*. This unit had four companies, formed from the independent *Panzer-Funklenk-Kompanien* numbered *311*, *315*, *316* and *317*. In January of 1945, the *4. Kompanie* was transferred to *Pz. Abt. 303 (Fkl.)*. This battalion served as *Heerestruppen* in France, and after re-equipped in December of 1944, it saw combat in East Prussia under *4. Armee*.

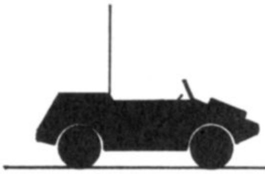
Panzer-Funklenk-Abteilung 303. was formed 18 January 1945 in Eisenach, with three companies and a total of 45 *Sturmgeschütz III.* assault guns; the training staff and cadre were provided by the *4. Kompanien* of *Pz. Abt. 301 (Fkl.)* and *Pz. Abt. 302 (Fkl.)*. On 20 February 1945, the battalion moved to Döberitz and was redesignated as *Panzer-Abteilung Schlesien*, serving under the *Panzer-Division* of the same name. After the dissolution of *Panzer-Division Schlesien*, the battalion reassumed the number *'303'*. In the closing days of the war, the battalion served under *18. Panzer-Grenadier-Division* in the

Continued on Page 40

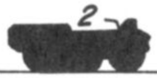
LEICHTE-PANZERKOMPANIE (f.G.) "F"

KStN 1171f (f.G), dated 1 October 1944

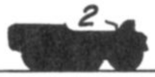
HEADQUARTERS SECTION



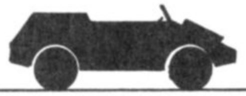
1 NCO Signal Sgt. (P)
1 NCO Weapons Sgt. (P)
1 EM Driver-Radio Mechanic (R)



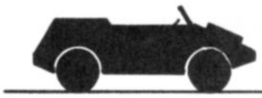
1 EM Messenger (R)



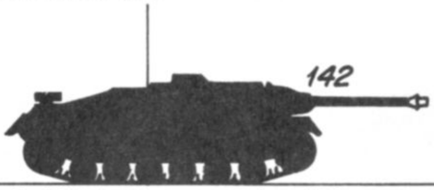
1 EM Messenger (R)



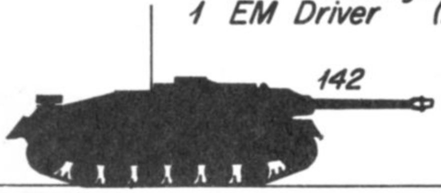
1 OFF Company Commander (P)
1 EM Messenger (R)
1 EM Driver (R)



1 NCO First Sgt. (MP)
1 EM Messenger (R)
1 EM Driver-Clerk (R)

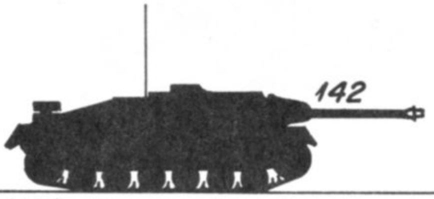


1 NCO Commander (P)
1 NCO Gunner (MP*)
1 EM Radioman-Loader (P)
1 NCO Driver (P)

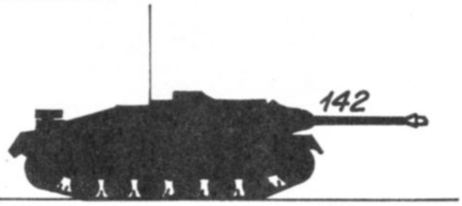


1 NCO Gunner (MP*)
1 NCO Radioman-Loader (P)
1 NCO Driver (P)

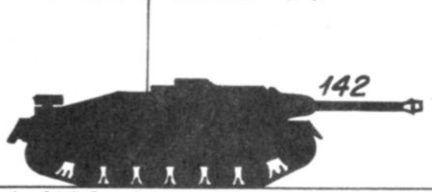
FIRST PLATOON



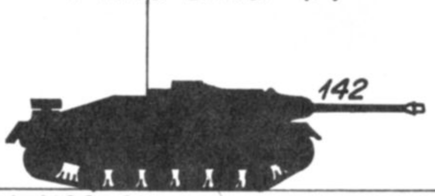
1 NCO Commander (P)
1 NCO Gunner (MP*)
1 EM Radioman-Loader (P)
1 NCO Driver (P)



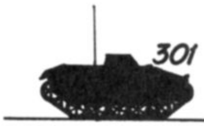
1 OFF Platoon Leader (P)
1 NCO Gunner (MP*)
1 EM Radioman-Loader (P)
1 NCO Driver (P)



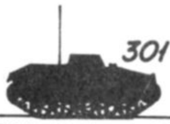
1 NCO Commander (P)
1 EM Gunner (MP*)
1 EM Radioman-Loader (P)
1 NCO Driver P



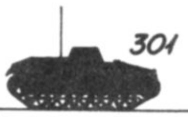
1 NCO Commander (P)
1 NCO Gunner (MP*)
1 EM Radioman-Loader (P)
1 NCO Driver P



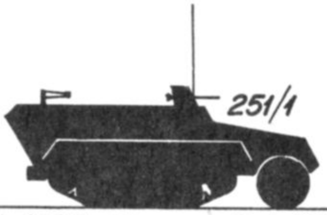
1 EM Driver (P)



1 EM Driver (P)



1 NCO Driver (P)



1 NCO Pioneer Sgt. (MP)
1 EM Signal Mechanic (P)
1 EM Driver (R)

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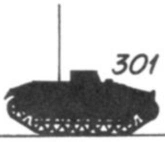
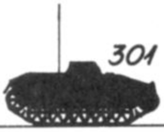
1 EM Driver (P)

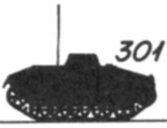


1 EM Driver (P)

1 EM Driver (P)



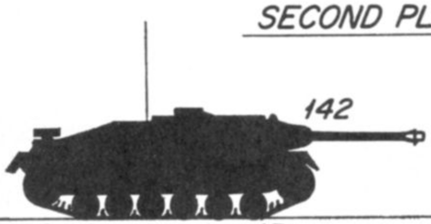
1 EM Driver (P)



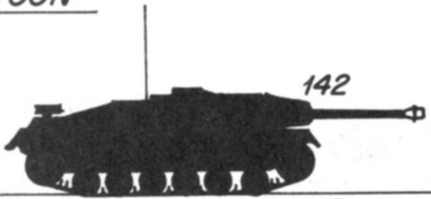
1 EM Driver (P)

1 EM Driver (P)

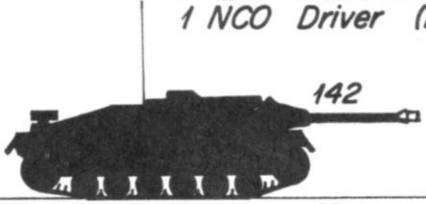
SECOND PLATOON



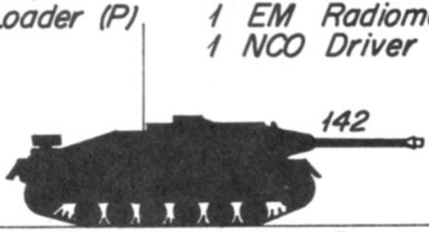
1 NCO Commander (P)
1 NCO Gunner (MP*)
1 EM Radioman-Loader (P)
1 NCO Driver (P)



1 OFF Platoon Leader (P)
1 NCO Gunner (MP*)
1 EM Radioman-Loader (P)
1 NCO Driver (P)

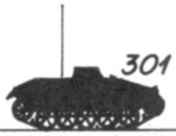


1 NCO Commander (P)
1 EM Gunner (MP*)
1 EM Radioman-Loader (P)
1 NCO Driver (P)



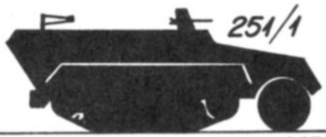
1 NCO Commander (P)
1 NCO Gunner (MP*)
1 EM Radioman-Loader (P)
1 NCO Driver (P)

1 EM Driver (P)



1 EM Driver (P)

1 EM Driver (P)



1 NCO Pioneer Sgt. (MP)
1 EM Signal Mechanic (P)
1 EM Driver (R)

1 EM Driver (P)

1 EM Driver (P)

1 EM Driver (P)

1 EM Driver (P)

1 NCO Driver (P)

1 EM Driver (P)

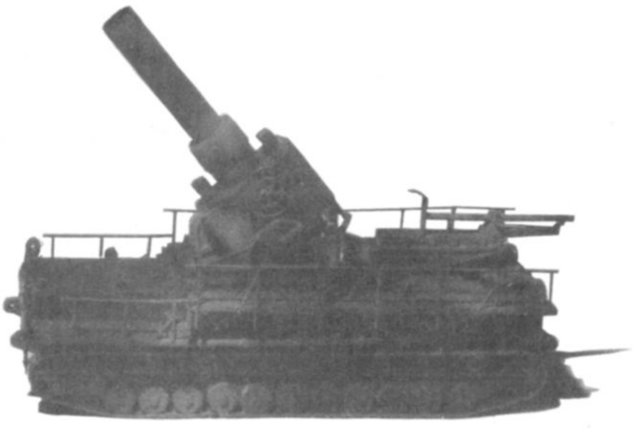
REPLACEMENT SECTION *

1 NCO Section Leader-Vehicle Commander (P)
1 EM Gunner- M.G. Gunner (P)
1 EM Radioman-Loader (P)
1 EM Driver (P)
1 EM Signalman (P)

* Normally attached to the supporting Versorgungs-Kompanie

The Armor Models of ERIC CLARK

by Duane Thomas



During the past few months, I've been running a small-scale survey. Whenever I encountered a fellow 1:76th scale armor model builder, I've brought up the subject of Eric Clark models. This was done for several reasons: first, to find out the percentage of model builders who were familiar with the models, and secondly, to find out specific favorites and complaints which would aid me in writing this article. The answers to my little survey were somehow startling, in that few of the model builders I encountered had even heard of 'Eric Clark' models, much less seen them! Only one or two modelers I talked with who knew about them had actually built one of them! As I talked with the model builders who had actually built these model kits, several interesting comments came to light; everyone was universal in praise of the Clark models, indicating that the models were quick to win prizes in model contests. In addition, these model builders were quick to comment about the few problem areas they had discovered and the few problems seemed to be virtually identical in every modeling case...

Eric Clark is the owner of the world's smallest model manufacturing company! I say this with no irreverance, as I'm a firm believer in individual enterprise and initiative. In fact, if anything is needed in the armor modeling hobby, it is smaller, more responsive manufacturers who are more interested in supplying what the model maker actually wants. The biggest problem in the United States is that few modelers are aware of Mr. Clark and his models, much less aware of the method of acquiring some of them. Indeed, many were the blank looks I received on mentioning Eric Clark during my survey... This article is an attempt to make more armor model builders aware of the models manufactured by this one-man company, and to acquaint them with the model characteristics. Indeed, if you're 1:76th scale armor modeling, this article could (possibly) change your whole attitude toward this small-scale modeling field.

Eric Clark's models are produced to a uniform scale of 1:76, or 4mm equals 1 foot. This scale is probably the most popular modeling scale in the British Isles when it comes to armor or vehicle modeling, and it is akin to 1:72nd scale among the aircraft modelers in that region of the world. While imported armor kits are in other scales, this one scale is chosen by most manufacturers in that country, and the available modeling range is quite good. The Eric Clark line of models were produced to fill in some gaps and to compliment the armor kits available from other manufacturers. Thus, you'll find that there are no duplications in the Clark models when compared to the many Airfix or Fujimi offerings. Each Clark model is designed to add something unique to a 1:76th scale modeling collection... Sound interesting? Okay, let's look further...

On first opening the shipping box and looking at the parts of an Eric Clark model kit, you're in for some surprises. The molding, first of all, will be quite different from that of any kit you've built in the past. These kits are cast or molded in light blue fiber-glass resin, and most parts are quite heavy, being cast as solid pieces instead of 'hollow shells'. This, of course, adds rigidity to the finished model. One of the universal problem areas with this type of casting material is the fact that the material, although quite durable and strong, is also quite brittle. This means cutting, scraping and filing the resin parts with care! Parts have to be cemented together with either epoxy or *cyranoacrylate* ('super' or 'instant') cement. Either will work fine, although modelers should be very careful with any of the second type of glues. Any attempt to cement the resin parts together using 'plastic' or 'styrene' cement is bound for failure.

Modelers should not assume that these model kits will go together as easily as the mass-produced plastic armor models (produced by Airfix or Fujimi, for example). For one thing, the models require a good deal more actual 'work' rather than just 'assembly'. On those models having wheels, for example, the rear of the wheels must be drilled-out to accept your axles (which are not supplied in the kit), which are then cemented under the vehicle. Tank turrets must have a hole drilled in their base to accept a traversing pin; in addition, a fabricated gun barrel must be added to the turret as these are not supplied in the kits. (These can easily be made from wire or stretched sprue.) In almost all cases, though, assembly is simple and straight forward. I have encountered nothing which is beyond the capabilities of the fairly competant model builder. In some kits, some of the parts required to finish the kit must be taken from the modeler's 'parts bin' or 'scrap box'; the manufacturer casts nothing which is routinely available in other model kits. The instruction sheets are quite rudimentary; however, if you have any real problems in figuring out how to put the model together, the manufacturer will advise you by return mail! (How's that for service by the manufacturer?) On the positive side, these models are not crude by anybody's standards... the detail that Mr. Clark has put into these models has to be seen to be believed.

Well, by this time, I suppose that I've got a lot of model builder's interest, right? How can you get one (or more) of these models to get started on? That's the next question, for if you start going around to the local model shops, looking for Eric Clark models, you're doomed to a wandering life. There is a little trick at this acquisition stage... Here's what you must do: First, join the M.A.F.V.A... (No, I didn't say join the 'Mafia'.) M.A.F.V.A. stands for the 'Miniature Armoured Fighting Vehicle Association', and this is the largest armor modeling club (or association) in the British Isles (or in the world for that matter). Mr. Clark's models are *only* available to members of the M.A.F.V.A.; this set-up was originated for Mr. Clark's benefit, as I understand from correspondence with members of the organization. Unless there was some qualifying method of ordering these model kits, Mr. Clark would be completely swamped with orders for the models, and thus would have little or no time left for anything else in life. So, if you want the models, first you've got to join the 'organization'. Actually, you'll gain quite a bit from your membership by itself. For example, a bi-monthly magazine, titled 'Tankette', which is chock full of interesting 1:76th scale drawings of military vehicles, as well as a number of good, clear photographs to aid you in your modeling. At the bottom of the page, I've included the address of the M.A.F.V.A. secretary for those readers who want to obtain more information or who want to join. Yearly dues are quite nominal for the advantages you gain, and are only $5.00 per year for surface mail, and $6.00 per year for air shipment of 'Tankette'. Once you join the association, you'll receive your membership number and then are 'qualified' to order Mr. Clark's models from him. First, write to him, at the address indicated below, to ascertain prices, which may have changed due to the inflationary situation here or abroad. Once you've got the prices, go ahead and order. There's quite an interesting line of available models... what kind? Well, I'll take

Continued on Page 39

Conversion of the Airfix JS-III into a JS-II ...

OR, HOW TO ACHIEVE TOTAL FRUSTRATION IN TWENTY-THREE EASY STEPS

BY JOHN C. BRITTON

As you are no doubt aware, scratchbuilding and conversion work are fun but sometimes difficult undertakings, and what worked for me may not work for you: i.e., take all the Turret Construction measurements with a grain of salt - cut your pieces large and trim down. The parts from the kit that were used are 1-53, 55-58, 60, and 62-67. It may seen that you are using a great majority of the kit, but there's a lot of sheet plastic involved, and a few 'scrounge' parts as well. These latter come from Airfix T-34/85 turrets (2 needed) and the Fujimi KV-IA, plus the parts box.

Several pictures of the JS II are definitely in order if you intend to tackle this conversion. I would suggest purchasing Bellona Print Series #22, which covers the JS-122. This vehicle has the same basic chassis as the JS-II and the Bellona Print is an invaluable reference, especially for the hull shape and engine deck details. As I am neither an engineer nor a draftsman, please pardon the fact that the drawings, done *ex post facto* of my conversion, are not to scale. The plastic is Squadron Sheet Styrene, plus the usual tools, and blood (remember the X-acto knives!), toil, sweat, and an occasional tear. Read through the directions (soon to be published in book form) and make sure they are clear (like mud!), which brings me to my next point, to wit:

I'd love to hear from you if you have any questions, comments, additions, so forth, so on, and *et cetera*. I'd also like to share information on references.

John C. Britton
1645 Carol Sue Ave., # 167
Gretna, LA 70053

INSTRUCTIONS

1. Remove forepeak from hull bottom, part 53.

2. Remove and save the top portion (approximately 3 mm) from lower hull sides, parts 1 and 50. See Fig. 1.

3. Remove fender wings from hull rear plate, part 51. See Fig. 2.

4. Cement hull together (that is, the four pieces above) and allow to dry.

5. Consult Fig. 3. Make two small triangular pieces from thick (.040) stock and cement them to the upper side of the hull front as fender supports. Make lower nose plate from thick plastic, 8x21 mm. Cement it between hull sides at 30 degrees from vertical. Fill with scrap plastic and putty the opening between this piece and the hull bottom. Remove the small points of the hull sides that protrude in front of nose plate. Note: The hull sides should rise 3 mm higher than the nose plate.

6. Cut out fender deck from .010 plastic according to Fig. 3a. Bend front (and rear, if you are using them) fenders downward around a small X-acto knife handle and cement to hull.

7. Remove grillwork from part 52 of the kit. See Fig. 4 for details. After trimming off 10 mm just to be safe from the two scrap pieces left from Step 2, cement them to the underside of the grillwork so that the excess of the mounting pieces lies to the front to act as a support for the rest of the upper deck, to be added later. The grillwork, when placed and cemented to the fender deck, should line up with the sides of the hull rear panel. *NOTE:* Up to this point, you can use this basic vehicle for a JS-I, JS-II or any of the JSU series of assault guns. Now to continue with the JS-II.

8. Cut a 16x21 mm piece of .040 stock to the shape depicted in Fig. 5. (Area 'V' is the location of the vision device to be added later.) Cement the glacis plate to the hull at a 60 degree slope, with point B the place where the glacis meets the top of the fender deck. Support from underneath if necessary. When dry, make outer fender supports from .010 and .030 stock, using as a guide Figs. 3 and 7, the Fujimi KV-1, and anything else you can lay hands on.

9. Now comes a moderately tricky part. Make the upper hull sides from .010 sheet. Scissors are good to cut the curved contours of the pieces as shown in Fig. 6 and 7. The sides start from a near vertical in the rear to a near horizontal in the front. Needless to say, bend the sides to shape before cementing.

10. Cut a piece of heavy stock to fit the hull top, and bracing it with 3 mm wide strips of .040 plastic (set on edge, of course), cement the hull top into place on the already extant bracing from the grillwork. Fill, file, sand, etc., and be sure to round the countours where the glacis plate meets the hull sides.

11. The bow machine gun is mounted above the right fender's inside edge, recessed into the curved hull side. The vision device is made from two pieces of .040 stock cut into a wedge. See Figs. 7 and 8. The hull episcopes are from an Airfix T-34/85 turret and hatch, or from shaped sprue. Running gear and tracks are from the JS-III kit, as are the fuel tanks. In your usual fashion, make or scrounge things like the headlight, horn, tool boxes, tow hooks and all the other junk normally associated with armored warfare.

Whew! Now for the turret...

12. Cement gun barrel and mantlet (parts 56 and 57) together and let dry. When dry, remove gun sleeve and barrel from mantlet and discard mantlet See Fig. 9.

13. Using a Monogram ¼-inch scale 500-lb. bomb, or something of similar size and shape, make the new mantlet and trunnion mounts. Remove the arming fuze and the tail cone/fin assembly and discard. See Fig. 13a. Saw off the *hemispherical* nose (a pointed one won't do, duckie!), split it along the seam and sand the seam to remove traces of old glue. The remaining cylinder should be trimmed to a length of 13mm. Cylinder diameter should be 9mm. Fit the trunnion mounts to the sides of the new mantlet to see if they extend beyond the cylinder, or at least be flush with it as they should. If not, file the back of the cylinder or remove a portion of it.

14. Cement the trunnion mounts to the mantlet, with the latter very slightly recessed between the former, by about ¼ to ½mm, or just enough to be seen. Cement this assembly to an 11 x 20mm piece of .040 plastic, leaving 1mm on what will be the top and bottom edges of the piece. See Figs. 13 and 14 if any of this is hazy. I hear a stampede to Figs. 13 and 14. Anyway, when this is dry, roughly trim the backing plate to the side contours of the trunnion mounts; it will be filed smooth in a later step.

15. For the turret base, cut a piece of .040 sheet to the size and shape shown in Fig. 10, and two circular pieces of .020 plastic, 27mm in diameter; this will become, in a later step, the turret ring.

16. For the turret sides, use .030 plastic. Each of the six (6) side pieces are similar (to the one on the other side of the turret, that is) but not identical to the one opposite it. This is due to the fact that the turret's shape is irregular, and that the right turret side slopes much more than the nearly vertical left side.

Continued on Page 36

FIGURE 1.
Step 2

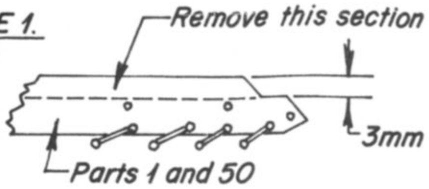


FIGURE 2.
Step 3

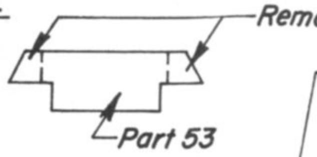


FIGURE 3.
Steps 5 and 6

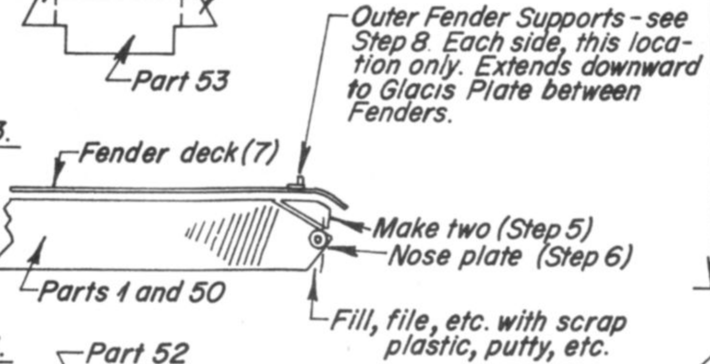

Outer Fender Supports - see Step 8. Each side, this location only. Extends downward to Glacis Plate between Fenders.
Fender deck (7)
Make two (Step 5)
Nose plate (Step 6)
Parts 1 and 50
Fill, file, etc. with scrap plastic, putty, etc.

FIGURE 3A.
Step 6

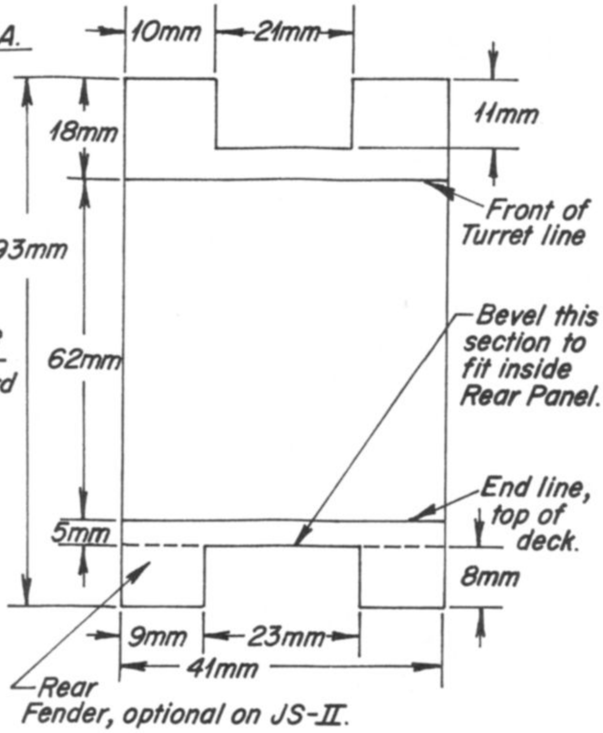


FIGURE 4.
Step 7

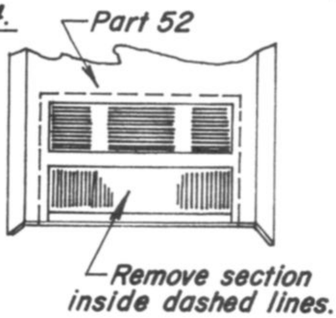


FIGURE 5.
Step 8

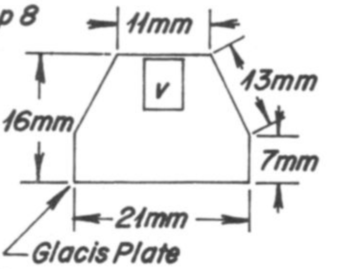


FIGURE 7.

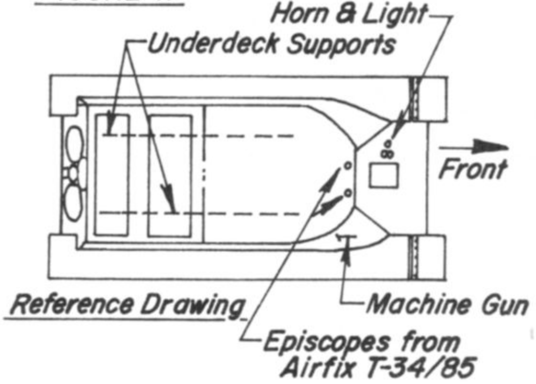


FIGURE 6.
Step 9 - Hull Sides, make two

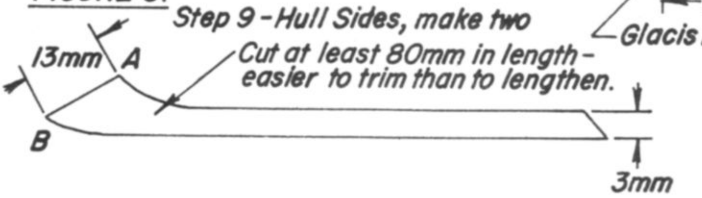

13mm
A
Cut at least 80mm in length - easier to trim than to lengthen.
B
3mm

FIGURE 8.

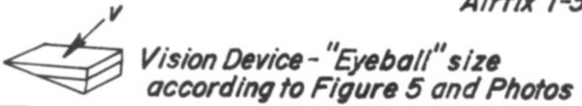
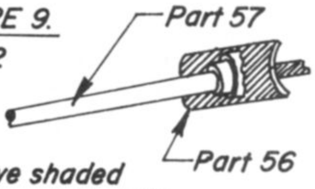

V
Vision Device - "Eyeball" size according to Figure 5 and Photos

FIGURE 9.
Step 12



Remove shaded portion of Part 56

NOTE: DRAWINGS ARE NOT IN ANY PARTICULAR SCALE !

FIGURE 11A.
Turret Sides

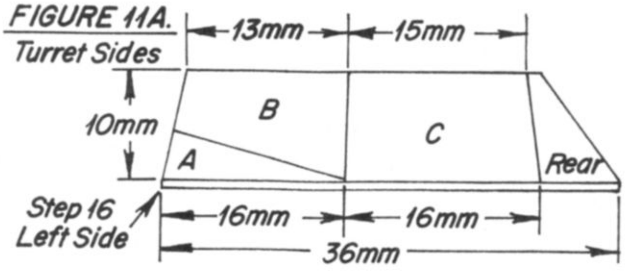
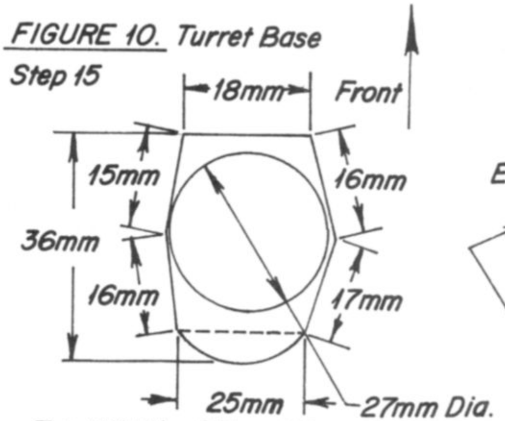


FIGURE 10. Turret Base
Step 15



Total Width of Turret Base = 30mm

FIGURE 11B.
Turret Sides

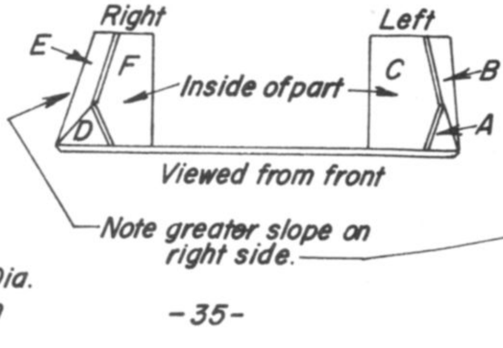


FIGURE 11C. Turret Sides

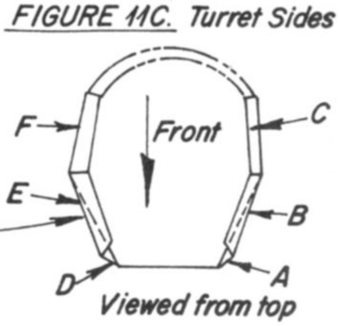


FIGURE 11D. - Turret Side Support

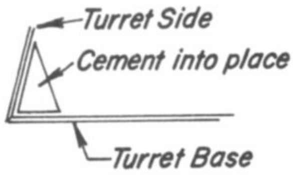
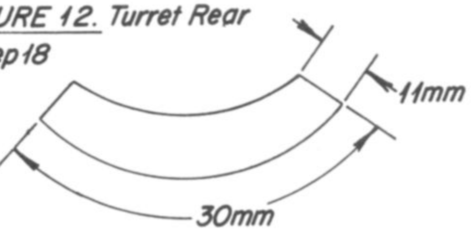


FIGURE 12. Turret Rear

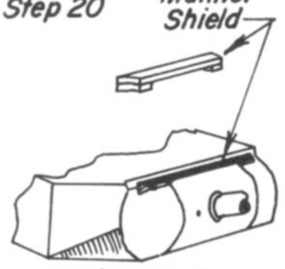
Step 18



Experiment with paper template for proper fit.

FIGURE 13. Upper Mantlet Shield

Step 20

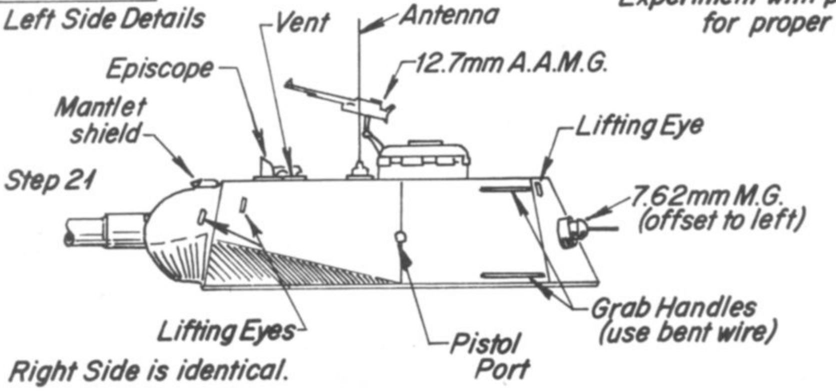


Installed on turret

FIGURE 14.

Left Side Details

Step 21



Right Side is identical.

FIGURE 13A. Step 13

Mantlet

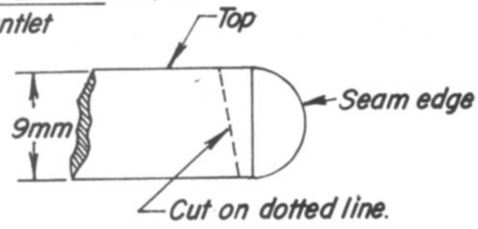
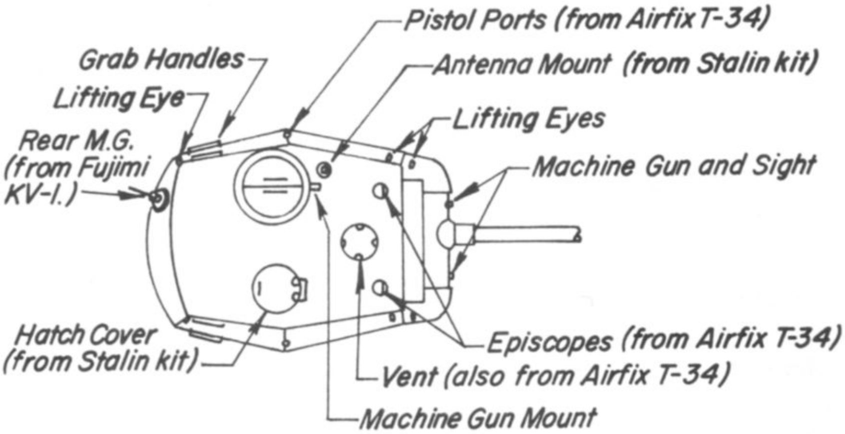


FIGURE 15.

Step 21

Turret Top Details


Pistol Ports (from Airfix T-34)
Grab Handles
Antenna Mount (from Stalin kit)
Lifting Eye
Lifting Eyes
Rear M.G. (from Fujimi KV-I.)
Machine Gun and Sight
Hatch Cover (from Stalin kit)
Episcopes (from Airfix T-34)
Vent (also from Airfix T-34)
Machine Gun Mount

NOTE: THESE DRAWINGS ARE FOR ILLUSTRATIONAL PURPOSES & AND ARE NOT TO SCALE!

These pieces are referred to as A, B, and C on the left, and D, E, and F on the right. See Figs. 11a, 11b and 11c for placement and approximate dimensions. For assembly, I suggest using trianglular braces cut from scrap .010 or .020 plastic (Fig. 11d). Be sure to bevel the edges of the side pieces for better adhesion when cementing. Assemble, fill, file, etc.

17. When the above is good and dry, cement the gun backing plate to it, butting the backing plate against the beveled front edge of the turret base, *not* on the top of the front edge. (See Fig. 14) Fill and file the sides to a smooth contour. When painted, the backing plate should not be visible as a separate piece. (When the turret is finished, re-scribe the weld lines.)

18. The turret rear is a tricky part, being a curved plate sloping about 30° at the rear. Use .010 stock, as it is easy to cut with scissors and is easy to bend to shape. I'm no mathemetician, but if you keep one in your closet for emergencies such as this one, he or she should be able to calculate the exact dimensions of this part before you start hacking away. I just started large and pared it down to fit. (You may wish to use a piece of light cardboard to avoid wasting plastic, and then trace the outline onto the plastic.) Anyway, when you get it to fit by whatever method, cement and clamp it until it's dry.)

19. When it is dry, invert it on a piece of 320 sandpaper and sand lightly to get a uniform edge. Remember that silly millimeter on the gun mounting, which really shouldn't be sticking up that much. Then bevel the inside edges of the turret sides, and invert it again, this time on .030 plastic. Trace around it for the turret roof, which is cut out, beveled and then cemented into place. Fill, file and sand when dry. The gun mount should by now be flush with the turret roof.

20. Now for the little stuff! The upper mantlet shield is cut from .010 sheet, one each 5x14mm and two each 1x5mm, and cemented to the trunnion mounts over the mantlet. Remember that this curves: see Figs. 13 and 14. Now cement the gun barrel to the mantlet at the desired angle. Cement the circular piece from Step 15 to the turret bottom according to Fig. 10, if you haven't already, you sly dog, you. Make the lifting eyes out of whatever pieces of scrap come to hand. I cut the pistol ports from the good ol' Airfix *T-34/85* turret (it was a handy thing to have a couple of). The rear machine gun mount is from the Fujimi *KV-IA* kit. It was left over from my conversion of a *KV-85*. Beat ya to it!

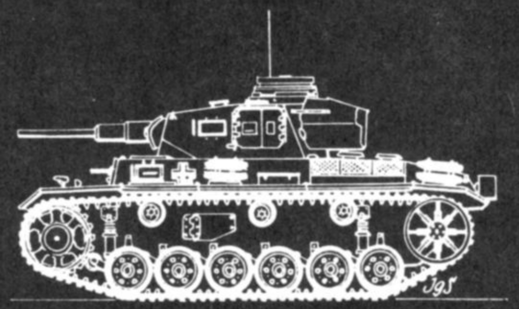
21. The vent and episcopes were cut (again) from an Airfix *T-34*, and the hatch from the same source. Remove vision devices from the hatch, cement down the hatch cover, and file off details. Cut hatch from turret roof and file to shape. Scribe a new, split hatch cover, or, bore out the hatch and make cover halves from .010 card. Place the machine gun at the desired angle. The antenna mount was cut from the *JS-III* turret roof (bet you thought you'd never use that piece, didn't you!), and the right-hand hatch cover is from the kit. For placement of these goodies, see Figures 14 and 15.

22. Paint this masterpiece your favorite shade of Soviet dark tank green, or white over the same, add the tracks, tow cables, tarps, and all the *et ceteras* your heart desires. And there it is... Markings are from the pictures you're able to find.

Did I say twenty-three steps? OK.

23. Now let your friends eat their hearts out!

ARMOR MODELS IN REVIEW



Product Review: Italaerei's *Jagdpanzer Tiger (P) 'Elefant'* in 1:35th Scale.

Reviewed by Jon H. Randolph

By June 1943, 90 of the approximately 100* Porsche Type 101 chassis originally envisioned as successful contenders for the *VK 4501* contract had been fitted with twin Maybach engines, reinforced frontal armor and a new, rear-mounted fighting compartment. Initially christened *'Ferdinand'* after their designer, they were first used during the German offensive against the Kursk salient in July 1943. Certainly a formidable vehicle with an *8.8cm PaK 43/2* and 200mm frontal armor, they were nonetheless subject to numerous mechanical failures due to the hybrid nature of their already complicated drive train. Renamed *'Elefant'*, the 50 vehicles which survived Operation Citadel were later transferred to Italy after being retroactively fitted with commander's cupolas, hull machine guns, *Zimmerit*, and numerous minor detail revisions.

Long a favorite with the scratch-builder, over the past year the modeler has been treated to several releases of the Elefant' in scales ranging from 1:76 to 1:16! This review will examine one of them: Italaerei's *Jagdpanzer Tiger (P) 'Elefant'* in 1:35th scale.

Like all of the kits released to date, Italaerei's represents a post-Kursk version, using the sole-surviving *Elefant* at Aberdeen Proving Grounds as a prototype. The kit consists of over 200 sand-colored polystyrene pieces with Italaerei's usualy superbly-detailed gray polyvinyl tracks. Unlike their earlier releases, the paired bogie wheels are detailed on both sides. Molding is excellent except for the headlights (which are superfluous on post-Kursk vehicles), hull machine gun and bogie hub covers. The kit assembles very smoothly with visible glue joints being nicely concealed or eliminated except along the gun tube. The 'hot nail' assembly technique is used for the moveable suspension, and detail part locations are indicated by finely-raised lines.

In general, this is a fine rendition of a post-Kursk *Elefant*. The model checks out as 1:35th in all major dimensions, and mold engraving is obviously 'state-of-the-art'. However, it seems that no kit is perfect and this one is no exception. With the attention to detail shown in most aspects of this release, it is surprising to find *ALL* of the outer vehicle storage either erroneously located or missing completely. Other omissions include driver's and commander's periscopes, gunner's sight, superstructure front gutters, and mantlet armor connecting bolts. An unfortunate (but understandable, after examining the configuration of the part) engraving error has reversed the bolt detail to the right of the hull machine gun, but this is relatively easy to correct. The ventilator cover near the hull-fighting compartment joint and the driver's periscope framework must be reduced to approximately half their height. Some detail (seats, flooring and steering levers) is provided for the driver's and radio operator's compartment but this area remains unconvincing if the superstructure hatches are left open. Either supplement the existing detail with subflooring, bulkheads and the compressed air system, or remove the ejector pin marks from the reverse side of the hatches and install them 'buttoned up'. No fighting compartment detail is provided, nor really necessary, for most of it would be lost in the shadows. *Zimmerit* should be applied to the completed model - see any photo of a post-Kursk vehicle for details of *Zimmerit* location.

The multi-lingual instructions sheet is quite straight-forward and includes some interesting information on the 653rd Independent Heavy Artillery Regiment. Modelers should note that the paint schemes provided were disctinctive of Kursk vehicles only. Decals consist of several pairs of solid white and solid black vehicle numbers, three *Balkan* crosses, and some peculiar tactical markings. Three crew figures in rather gaunt-looking winter uniforms with separate wireless headsets are provided.

All-in-all, at $8.00, this is an enjoyable subject done in a professional manner at a price slightly under comparable Japanese imports.

* Production figures differ depending on references consulted; the reviewer presents figures which he believes to be the most accurate.

Product Review: Tamiya's *Russian SU-85 Tank Destroyer* in 1:35th Scale.

Reviewed by Wayne Larson

Probably the most important self-propelled weapon of the World War II. Red Army was the SU-85 tank destroyer. Seemingly borrowed from the German development of limited-traverse, heavy armament on a tank chassis, the SU-85 mounted an adaption of the Soviet 85mm Anti-aircraft gun on the well-proven chassis of the T-34 medium tank. Although production of the T-34 tank in 1942 lagged behind actual need, chassis were being diverted to production of SU-85's. Derived from the similar SU-122 (which mounted a low-velocity 122mm artillery piece), these tank destroyers were simplier to build than tanks and they were very effective in the defensive role then thrust upon the Russian Army. The long-barreled 85mm gun had a performance which outranged almost all enemy tank weapons and its armor-penetration was adequate to destroy all German armor it encountered, until the advent of the *Tiger* and *Panther*. In actuality, both of these German 'cats' could be penetrated by the SU-85 from the front, provided the Russian weapon fired from relatively close range.

One of Tamiya's latest 1:35th scale kits is a fine rendition of the Russian SU-85. Cleanly molded in a dark olive green plastic, virtually all molding is flash free. Accuracy in molding is excellent; all of my test measurements (which were taken from a real vehicle) show that the Tamiya model is right on the mark. A few minor variations were found, but nothing exceeding one-inch in error. The exterior of the model is cast in a slightly rough texture which nicely duplicates case armor. The prominent weld lines are beautifully reproduced, even down to the ripples left in the molten metal. The lower hull of the SU-85 kit, as well as suspension components and track, were borrowed from the slightly earlier Tamiya Russian T-34/76. The lower hull has the typical markings of a motorized model: a number of holes and a pair of internal battery brackets. These can be filled

Continued on Next Page

or filed easily so as not to be noticeable, but it still remains a sore spot to me... those of us who build static models and are looking for more perfection in our models don't need inaccuracies in hull bottoms. The road wheels featured in this SU-85 model differ slightly from the T-34/76 as they are all the early smooth-dish type. As with the T-34 tank model, the track and suspension components are beautiful; the track has inside and outside detail and the rubber tires of the road wheels are complete with expansion slits that faithfully duplicate the original. Component fit is generally excellent, however, we encountered some difficulty in mating the completed upper and lower hulls together. Most of the crew hatches can be worked into the open position, although this is not recommended as the amount of interior detail is disappointing. This is an area in which Tamiya needs improvement, especially in a vehicle like the T-34 or SU-85 which have large crew hatches. The larger the open hatch, the more detail should be visible through them when opened.

There are a lot of nice extras in this kit that deserve mentioning. The front fender flaps and the rear spare fuel drums are bent and battered; these add a nice weathered touch to what is otherwise a 'new' vehicle. Tow cables are separare styrene parts and these can be bent to the desired shape using localized heat at the bend points. There are numerous spare track shoes... to be placed on the glacis front and/or fenders. Four 'ice gripper' track shoes are a fender accessory, as are 'Zip' tool boxes, a rolled-up tarpaulin and a shovel. One figure is provided with the kit; this is a seated, bare-headed commander figure, posed holding his tanker's helmet in one hand and the open hatch with the other. This is an effective pose, although the figure's head has a sloping forehead, slightly resembling an ape. As the figure is multi-part, there is a good deal of variety in poses which can be done with it. I do wish that Tamiya would have provided an additional figure... perhaps a seated driver to fill that open void of a driver's compartment.

This is an excellent model of a widely-used Russian vehicle. It is welcome to compliment the models of Soviet vehicular equipment which have come on the scene in the past few months. While there are some errors of omission, such as the poorly-detailed interior and the single figure, this is a well done and accurate kit. While there's room for additional details, the model build right out of the box will look very realistic.

Peerless's *Bedford QL Gun Portee* Truck/Anti-tank Gun combination in 1:35th scale.

Reviewed by David Swenson

The Bedford QL Gun Portee was developed during 1941-42 as a result of an increased need for higher mobility of anti-tank weapons. This vehicle carried a standard towed 6-pdr. anti-tank gun in the modified rear body of the truck. The weapon could be carried in either a forward, on-carriage firing position or a rearward, on-carriage firing position. In addition, the gun could be dismounted and emplaced on the ground in a typical towed anti-tank gun configuration. The Bedford lorry was just one of many trucks converted to a 'portee' role; other vehicles included the Canadian Ford F60L and F60S, the Canadian Chevrolet C60L and C60S, and the British Austin K5. All of these trucks were in the 3-ton class, and there were a number of relatively standard modifications performed to the basic truck cab and chassis. All trucks were fitted with 'run-flat' (bullet resistant) tires and an extra fuel tank (which doubled capacity). The cab was fitted with a folding windshield and a deflective shield positioned above the radiator to deflect muzzle blast. Although somewhat underpowered, the Bedford QL Gun Portee was used operationally in North Africa, where it proved reasonably successful in providing extra mobility to British anti-tank units. After the 6-pdr. AT gun became obsolete, the Bedfords were reconverted for more mundane missions. The Bedford QL series of trucks were excellent performers and they served in a number of different roles throughout the war, including dump truuck, cargo and troop carrier, van and fuel and water tanker.

Peerless's kit of the Bedford truck is a welcome addition to this company's line of military softskin vehicles. The model is molded in khaki-colored styrene, with well over 250 parts in the box. The kit includes the 'portee' gun truck and a beautiful 6-pdr. anti-tank gun. The kit also includes one figure; a relatively poor representation of a truck driver, complete with a W. C. Fields nose. In addition, there are a number of extra detailing items which do deserve notive: four Enfield rifles, a Bren gun, six oil and/or water containers, extra side armor skirts, etc. Also inside of the box is a 12-page instruction booklet (which is among the clearest and easiest to follow that this reviewer has seen) and a 4-page historical booklet which briefly tells the story of the Bedford QL series of trucks, complete with 12 excellent photographs.

Assembly of the Bedford truck model is fairly easy, provided you take care in following the instructions and not removing parts from the 'trees' until needed. The truck model *is* complex, and is complete with a fully-detailed engine and radiator, full drive train, winch power-take-off's, etc. The cab is also complete, since the cloth top may be left off during assembly, and with a little care in painting, all of the detail can be shown off to good advantage (possibly with open doors). The kit is virtually two models in one, as the 6-pdr. anti-tank gun is, in itself, an outstanding model. The gun is finely detailed and includes virtually all of the parts of the original weapon. The breech block is free to 'slide', the gun tube is free to 'recoil', and the gun tails may be positioned in either the open or closed position at will. With this supurb anti-tank model, it's possible to pose the gun in firing position on the truck, or even being winched onto the truck from a ground firing position (the kit includes the gun loading/unloading ramps and spare tire loading ladder). Although the kit does not include figures to support an action pose, it should not be difficult to adapt other figures from other British North African campaign models.

Painting and other written instructions in the kit are generally clear, although there are a few awkward or mixed tenses in the English translations. The decal sheet contains markings for three different desert vehicles; two from the *7th Armoured Division* and one from the *1st Armoured Division*. One of the *7th Armoured Division*'s markings is a little suspect, but with a little research and care, it wouldn't be difficult to come up with accurate markings. Census numbers are provided in both black (for use on sand-colored vehicles) and white (for use on darker camouflage colors), and additionally, there is a bridge marking plate for the front of the truck.

This is an extremely well-done kit, and in this reviewer's opinion, is one of the best from Peerless to date. While a good deal of care must be exercised in removing, cleaning-up and handling of the small parts during assembly and subsequent painting, all the extra trouble is worthwhile when the finished model wins prizes at one of the local IPMS meetings (for example). Peerless has been doing a commendable job is producing kits which are highly unusual or unique, and when the same kits are superbly detailed, it's a pleasure to recommend them to armor modelers.

Bandai's *British Infantry Tank Mark III. 'Valentine'* in 1:48th Scale.

Reviewed by Duane Thomas

Bandai's 'Valentine' Infantry Tank is a nice addition to their 1:48th scale armor series; it nicely complements their 'Matilda' Infantry Tank and it models a piece of armor which has had no coverage until now. The model is molded in a sand-color styrene, and it assembles easily into an attractive model with no major errors. As with previous Bandai offerings, there's quite an amount of interior detail, including an engine (which could be left out if you keep the engine hatches closed). There are a few errors or omissions in the turret interior area, but nothing which cannot be easily remedied. The kit includes a tank crew dressed in temperate-climate uniforms. The instruction sheets are clear and easy to follow; however, the decal sheet is identical to that in the 'Matilda' kit.

Some extra effort with this model *will* result in a prize winning model. Inside the turret, add a recoil shield or guard for the 2-pdr. breech. Add the rear of the coaxial machine gun (which is missing for some reason). Make a number of 2-pdr.

Continued on Page 41

The Models of Eric Clark (Cont'd from 33)

a little space to list a selection of the kits thatare available. They include: German: *Panzer I.B* Tank, *Panzer II.F* Tank, *Panzer 35(t)* Tank, *Sd.Kfz.250* Halftrack, *Sd.Kfz. 251 'B'* Halftrack, *Sd.Kfz.251 'C'* Halftrack, *Sd.Kfz.251 'D'* Halftrack, *Sd.Kfz.10* Halftrack, *Sd.Kfz.11* 3-ton Halftrack, *Opel Maultier* Halftrack Truck, *R.S.O.* Tracked Gun Carrier, *Horch* Command Car, etc. British: Cromwell Mk. IV. Tank, A9 Cruiser Tank, Mark VI.B Light Tank, Daimler Mk.I Armoured Car, Staghound Armoured Car, A.E.C. Mk. III Armoured Car, Daimler 'Dingo' Scout Car, etc. Italian: *M13/40* Tank, *Semovente da 75/18* SP Gun, *Fiat 626BL* Truck, *CV33* Light Tank, *Autoblinda 41* Armored Car... and many, many more...

M.A.F.V.A. Secretary: G.E.G. Williams, 15 Berwick Avenue, Heaton Mersey, Stockport, Cheshire, SK4 3AA, England.

Eric Clark Military Models, 19 Lonsdale Road, Southport, Merseryside, PR8 6NL, England.

Return to D-Day (Continued from Page 41)

many rare vehicles, including a German *RSO*, the Italian Spa Fiat *Autoblinda*, an American T16 and a French *UE*. The curator told me that by next year he hopes to have his German *Sd. Kfz. 250* light armored halftrack on display. Also on display are a number of heavier weapons, including a *7.5cm Pak 40*, a *Nebelwerfer* and a *7.5cm le. Infanterie-Geschütz*. In addition, there is a *Tiger I.* Maybach engine and a cut-a-way *Panther* transmission.

On August 7th, we made ready for a side trip to Pourville. This was one of the high points of the tour, as the writer was given permission to ride the 25 miles in the M8 Armored Car. At Pourville, we were greeted by the town's mayor. After a short ceremony, we journeyed to a former German radar site where a large display of privately-owned vehicles awaited our inspection. After much too short a visit, we made our way to Dieppe for a short visit, and then back to Cleres for a farewell dinner. On the following morning, after much too short a tour, we headed back to England via the Le Havre to Southampton ferry. The tour consisted of about one hundred vehicles of all shapes, sizes and descriptions; in fact, the one common factor was that they all dated to World War II. I would like to compliment the professionalism of the many owners who brought their rare vehicles and participated in the tour. The people I met on this tour are some of the finest people I have ever met. This was one of the high points of my stay in England and I would like to encourage anyone who has the opportunity to join in future tours of this type.

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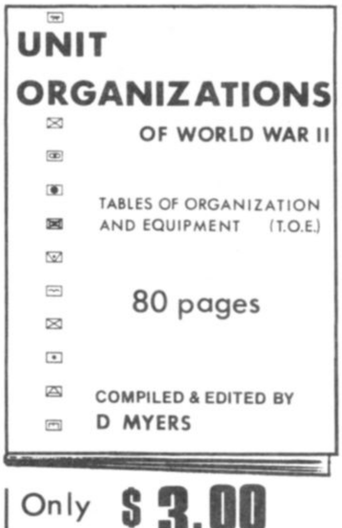

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The Baron's Bookshelf, with Book Reviews... (Continued from Page 29)

Centurion over the M-48/M-60 is attributed to the spotting rifle. What a range spotting rifle has to do with rapid fire is not explained!

In addition to the text, there are other problems. The editor, or at least the person captioning the photos, completely misses the point in constantly using the term *'Jews'* or *'Jewish'* instead of the correct and proper *'Israeli'*. An organization chart showing a *'Jewish Tank Brigade'* is inaccurate, showing too many tanks and a Mortar Battalion, which actually had been dropped from the 1973-period Armor Brigade. A chart showing *'Jewish Tank Markings'* is based purely on conjecture, and thus lacks in accuracy and credability.

All-in-all, this is an interesting booklet which presents good basic drawings, beautifully clear photos and good tabular data. The material on the Soviet vehicles is excellent. If you're intent upon researching the *Yom Kippur* War, this booklet puts together a lot of facts in a most readable form.

Editor's Note: Just as we were going to press on this issue, the following review arrived from one of our readers. While it, by chance, reviews one of the books already reviewed in this issue, the review is included as it provides additional information about the publication:

Book Review: *The Great Tanks*, by Chris Ellis and Peter Chamberlain (Publisher's Central Bureau, 1 Champion Ave., Avenal, NJ 07131, ca. $8.00)

Reviewed by Russ Vaughan

For its price, this is one of the better bargins of the season. *The Great Tanks* is of large format, 8½ x 11 inches in size, with 176 pages and about 300 illustrations, 50 in color. The chief merits of the book are the excellent color photos, especially of Israeli armor in the October War, several shots being double-page spreads. Other modern armor, Chieftans, T-54's and M-48's are also well covered in color.

The book is not without its faults, however. The text is a repeat of portions of the authors' other books, and in contrast to the illustrations, is concerned mainly with World War II. tanks. The unhappy result is another rehash of the visual changes in periscopes on Panthers and Russian turret shapes. If you haven't any of the authors' other books, this is quite acceptable. If you do have any of their others, you can just skip the text as there is nothing new. Perhaps someday the World War II. 'Great Tanks' will be analyzed rather than described, with emphasis on the doctrine, tactics and, for lack of a better term, 'man-machine integration' that made them successful. But this hasn't been attempted in *The Great Tanks*.

Another unfortunate feature of the text is the neglect of the modern tanks. The T-54/T-62 receives a scant half page, and the M-60 a single paragraph. The AMX 30 and Leopard arn't even mentioned. Admittedly not every modern AFV can be called 'great'; however, it appears that as far as the authors are concerned, the only great tank of the post-war period is the Centurion. There are also an irritating number of labeling errors in the U.S. section. An M-41 is labeled as an M-37. Israeli M-48's with 105mm guns are called M-60A1's, and M-48A3's in Vietnam are labeled as A2's. And, maybe I'm getting paranoid, but while in every applicable shot, it is noted that the gun is British, especially on Israeli vehicles, there is little notice of the U.S. built diesel engines in most of the same tanks - easily spotted by the distinctive fender-mounted air cleaners. It sure seems to me that the authors arn't at all interested in modern U.S. equipment.

All-in-all, though there is a lot to snipe at in the text, the book is still very authorative in what it does describe, and useful if you arn't acquainted with the authors' other books and Profiles. The illustrations can't be beat. I recommend it. Copies are available through Publisher's Central Bureau if you can't find the book in a local bookshop.

The Modern U.S. Army, Part 2 (Continued from Page 14)

one *Brigade*; however, if the non-divisional units of the New Jersey Guard are reorganized/redesignated as part of the *50th Armored Division*, this division will be at full strength.

It has been announced that three *Medical Brigades* will be formed in the National Guard, one in each Army area.

In the Army Reserve, the *89th Division* (*Training*) was converted to the *89th Army Reserve Command* in 1973.

As changes take place on an annual or semi-annual basis, it is virtually impossible to make this article more current. The author instead intends to provide short, updating articles which, it is hoped, will keep this basic series of articles current.

Space in this issue precludes insertion of a full list of all National Guard Armor/Cavalry units. This listing will be included in the next issue.

The German Light Radio-Control Tank Company (Continued from Page 30)

defense of Berlin and Eberswalde.

No further record has been found of a *Panzer-Funklenk-Abteilung 305.*, which had been listed in the U.S. Army's 1945 *'Order-of-Battle of the German Army'*. At this time, it seems doubtful if the battalion existed as no German record of it can be found.

Return to D-Day (Continued from Page 19)

ery, Livarot and St. Pierre sur Dives. We arrived at the Pegasus Bridge in time for a ceremony by Bill Millin, who was Lord Lovat's piper and who led the charge of the Scouts over the Orne Bridge on D-Day. Bill played his pipes while walking with a crowd of followers over the Pegasus Bridge. This was a very moving ceremony and all present, including the writer, got a large lump of emotion in his throat.

On August 6th, we headed for Brourtheroulde for a ceremony at the Canadian Memorial there. After this brief pause, we started for Rouen at 1600 hours, passing into the city an hour later. Next we headed for Cleres to visit their museum. Unknown to us, on the outskirts of Rouen an M8 Armored Car and an Italian Spa Fiat *Autoblinda* awaited us. They joined the convoy to act as escorts and they led us to the Cleres museum, where we were given free admission. This is an excellent museum which includes

Continued on Page 39

Muzzle Blast (Continued from Page 4)

The formula for changing mils to meters is very simple: Number of mils (M) times the range in kilometers (R) equals distance of correction in meters covered (D), or $MR=D$

Conversely, if you have the range and the height (or width) to be corrected, and want it into mills: $R \div D = M$

To know these simple rules makes understanding ranging much easier for me. In closing, I would like to make a small request. I'm converting a Tamiya Stuart into an M5A1 light tank, but cannot find a good rear picture of an M5A1 with stowage bin. Such photos seem to be practically non-existant! I'd appreciate anything you could find, and I'm sure it would help all those out there with similar projects in mind too. Thank you for your attention.

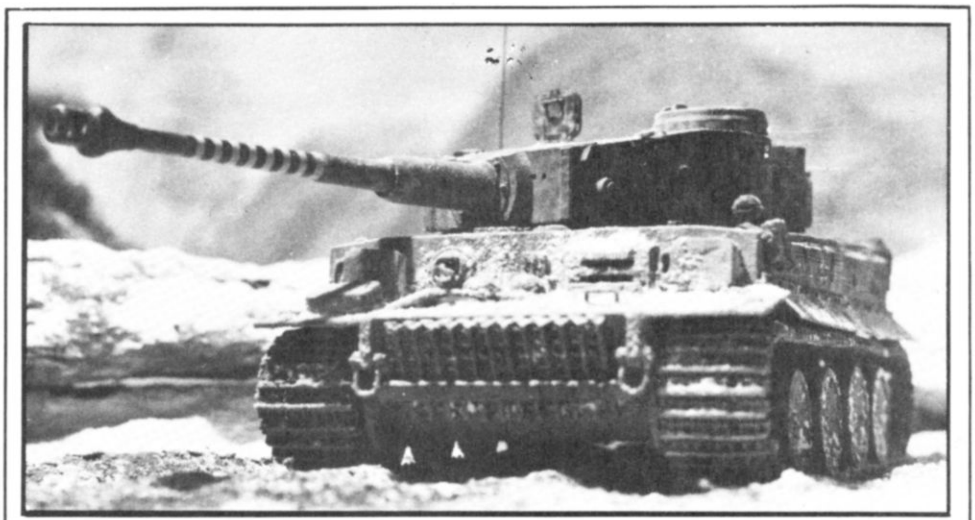
Yours truely,

Michael Duplessis
Boston, MA

Armor Reviews (Continued from Page 38)

shells from stretched sprue and fill the empty ammo racks. The hull and turret hatches need cleaning up; add extra details which will show, such as exterior and interior handles, catches, etc. Take your time in detailing; a most useful reference would be *'The Valentine in North Africa'* from Arms & Armour Press. The completed model could be finished in desert paint scheme or, as the tank was standard equipment in British armour units between 1941-43, it could be painted in temperate climate scheme. The decals will need supplementing from other sheets in order to obtain a truely accurate set of markings, but this extra effort is certainly worthwhile when the model is completed.

All-in-all, Bandai's 'Valentine' is an excellent model and it will make-up into an accurate representation of the original infantry tank.



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Abbreviations: AA-Anti-Aircraft Gun; AC-Armored Car; AP-Artillery Piece; APC-Armored Personnel Carrier; ATG-Anti-Tank Gun; CT-Cruiser Tank; HTAG-Heavy Tank/Assault Gun; HIT-Heavy Infnatry Tank; HT-Heavy Tank; IT-Infantry Tank; LT-Light Tank; LTFT-Lignt Tank/Flame Thrower; MT-Medium Tank; SPAG-Self-Propelled Assault Gun; SPAT-Self-Propelled Anti-Tank Gun; SPG-Self-Propelled Gun; SPH-Self-Propelled Howitzer; TD-Tank Destroyer; TR-Truck.

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